JPRS 84700

8 November 1983

# USSR Report

## ECONOMIC AFFAIRS

No. 1066

## EKO: ECONOMICS AND ORGANIZATION OF INDUSTRIAL PRODUCTION

No. 7, July 1983



FBIS FOREIGN BROADCAST INFORMATION SERVICE

NOTE

JPRS publications contain information primarily from foreign newspapers, periodicals and books, but also from news agency transmissions and broadcasts. Materials from foreign-language sources are translated; those from English-language sources are transcribed or reprinted, with the original phrasing and other characteristics retained.

Headlines, editorial reports, and material enclosed in brackets [] are supplied by JPRS. Processing indicators such as [Text] or [Excerpt] in the first line of each item, or following the last line of a brief, indicate how the original information was processed. Where no processing indicator is given, the information was summarized or extracted.

Unfamiliar names rendered phonetically or transliterated are enclosed in parentheses. Words or names preceded by a question mark and enclosed in parentheses were not clear in the original but have been supplied as appropriate in context. Other unattributed parenthetical notes within the body of an item originate with the source. Times within items are as given by source.

The contents of this publication in no way represent the policies, views or attitudes of the U.S. Government.

PROCUREMENT OF PUBLICATIONS

JPRS publications may be ordered from the National Technical Information Service (NTIS), Springfield, Virginia 22161. In ordering, it is recommended that the JPRS number, title, date and author, if applicable, of publication be cited.

Current JPRS publications are announced in Government Reports Announcements issued semimonthly by the NTIS, and are listed in the Monthly Catalog of U.S. Government Publications issued by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Correspondence pertaining to matters other than procurement may be addressed to Joint Publications Research Service, 1000 North Glebe Road, Arlington, Virginia 22201.

JPRS 84700

8 November 1983

# USSR REPORT

## ECONOMIC AFFAIRS

No. 1066

# EKO: ECONOMICS AND ORGANIZATION OF INDUSTRIAL PRODUCTION

No. 7, July 1983

Except where indicated otherwise in the table of contents the following is a complete translation of the Russian-language monthly journal EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA published in Novosibirsk.

## CONTENTS

MANY ECONOMIC SECTORS NEED NEW TECHNOLOGY & EQUIPMENT

Novosibirsk EKO: EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA in Russian No 7, Jul 83 (signed to press 2 June 1983) pp 3-19

/Article by V. K. Fal'tsman, doctor of economic sciences, head of the laboratory of investment processes of the Central Economics and Mathematics Institute of the USSR Acacemy of Sciences (Moscow): "The National Economic Order for New Technical Equipment"/

/Text/ The intensification of the economy advances a broad spectrum of requirements on new technical equipment and quality and technical level of machine building products. Scientific research and experimental design developments in this branch are oriented toward large national economic problems--energy, economizing on metal and others that are directed toward saving mineral-raw material and other natural resources and toward saving labor.

With the growth and concentration of production and urbanization, the requirements for nature protection in the functions of new technical equipment become more complicated. The task is not limited to removing and decontaminating production and household wastes. There is now a need for machines and equipment for processing wastes as secondary raw material.

The retardation of the growth of labor resources in the national economy raises another difficult problem for NIOKR /scientific research and experimental design work/ and machine building. The progress in technical equipment and technology is called upon to accelerate the increase in the productivity of public labor, primarily as a result of comprehensive mechanization. The new requirements on machine building products determine the policy for capital investments. The fact is that even in the 1970's the growth of capital investments in the national economy slowed down. This tendency apparently remains. Yet in order to intensify public production it is necessary to have large masses of progressive technical equipment. These conditions are compatible if the new machines and equipment are less expensive than the previous ones. In other words, instead of the requirement "quality at any price," machine building is faced with the problem of both "price" and quality.

These and other national economic problems serve to express the social order for systems of progressive implements oflabor. As in other spheres of industrial production, the main criterion for the activity of machine building enterprises is becoming the principle set forth at the November (1982) Plenum of the CPSU Central Committee--the degree of satisfaction by the branch of the constantly growing social demands.

Orientation Toward Large-Scale National Economic Programs

The energy program sets large tasks for machine building. In order to rapidly increase the extraction and transportation of Siberian gas, machine building will have to increase the output of pumping aggregates for main gas lines 1.5-fold during the years of the 11th Five-Year Plan, and for other facilities--2.3-fold. In addition to the quantitative increase in the output of equipment, the requirements on the technical level are being raised: machine builders will have to create effective technical means for gas lines with pipes with a diameter of 1,420 millimeters and a pressure of up to 120 atmospheres. It is intended to replace aviation-type turbines with an efficiency factor of 21 percent with gas turbine industrial installations with an efficiency factor of 28 percent, and to create models of equipment for pumping liquid gas.

Special significance is attached to improving the structure of the fuel and energy balance--the development of atomic energy and the replacement of petroleum with gas and coal. The Ministry of Power Machine Building in conjunction with the machine building ministries and the USSR Ministry of Power and Electrification are engaged in the creation of atomic reactors using thermal and high speed neutron as well as new kinds of energy equipment. It is intended to increase the output of equipment for atomic electric power stations at rapid rates.

In order to increase coal production it is necessary to have powerful mining equipment. Yet in recent years it has been discovered that machine building has not kept up with the needs of the extracting industry. They have not arranged the output of heavy bulldozers or dump trucks with a capacity of 180 tons and more, and they do not produce enough excavactor-shovels with bucket capacities of 12.5 and 20 cubic meters. The Belaz 75-ton dump trucks are expensive and in terms of their operational qualities and reliability they are still not as good as their 40-ton predecessors.*

Measures have been earmarked for expanding the output of heavy mining and transportation equipment. Thus by 1985 the production of mining excavactors with shovel capacities of 4 cubic meters and more will have increased 1.5-fold, and the output of mining dump trucks with capacities of more than 27 tons will have increased by 34 percent. But for a radical solution to the problem it is necessary not simply to expand the production of already known models, but to create new ones and raise the technical level and quality of the equipment that is produced.

*PLANOVOYE KHOZYAYSTVO, 1981, No 9, p 15.

It is necessary to have a system of mining machines for working large coal mines in the Kansk-Achinsk and other eastern bains. The processing of Kansk-Achinsk coal into improved solid, liquid and gaseous forms of fuel and chemical raw material, and their transportation and industrial utilization pose complicated problems.

There are large reserves in more complete extraction of petroleum from the earth. The Ministry of Chemical Machine Building and other machine building ministries will have to create equipment that provide for increasing the return from petroleum-bearing layers to 55-60 percent. In conjunction with the USSR Ministry of Ferrous Metallurgy, the Ministry of Chemical Machine Building is arranging for the production of technical means for drilling oil and gas wells at a speed that exceeds the present one 2-3-fold.

One of the radical ways of saving on fuel and energy resources is to change automotive transportation over to diesel eingines. Diesels with an efficiency factor of up to 38 percent as comapred to carburator engines save 30-35 percent of the fuel, and when operating under the usual conditions with partial loads--up to 40 percent. "Dieselization" of 60-75 percent of the automotive cargo shipments would make it possible to reduce the annual expenditure of liquid fuel in the country by 22-30 million tons.*

The use of diesel eingines in Zil and GAZ truck trains, when they are produced by the thousands each year, will make it possible in 1990 to save 250,000 tons of fuel in the national economy. Calculations show that capital expenditures on the production of diesel engines are about half as much as the amount required to extract and process the additional fuel for the fleet of truck trains with gasoline engines. In other words, the changeover to diesel eingines will save not only fuel, but also capital investments.

Another promising direction for economizing on liquid fuel and protecting the environment is to use electric motor vehicles. The solution to the problem is being impeded by the lack of sufficiently large batteries for machines with average and large cargo capacities. If we succeed in creating and assimilating the output of such a battery, the electric motor vehicles could perform all of the intraurban shipments (12-15 percent of the automotive cargo shipments), which will save 10-12 million tons of liquid motor fuel.** True, this would require approximately 50 billion kilowatt-hours of electric power annually for charging the batteries, but the energy could be provided by existing energy capacities, since the charging takes place during periods of decreased loads during the night. Moreover, the electric power stations would not be in need of motor fuel which is in short supply.

---

*"Questions of the Development and Planning of Technical Means of Transportation" in the book: "Trudy IKTP pri Gosplane SSSR" /Works of the Institute of Complex Transportation Problems Under the USSR Gosplan/, ed. 82, Moscow, 1980, pp 28-29.

**Ibid., p 29.

The program for economizing on metal sets responsible tasks for machine building. We are speaking about machines and equipment for progressive technologies of stamping (heading, extrusion, reduction, embossing and calibrating stampings, and so forth), precision cutting of billets, reduced heating with reduced oxidation, and for modern methods of painting and cutting rolled sheet metal, plasma processing of metals, spraying of powders, and cross-screw and longitudinal rolling. The application of new processes has been planned--electron ray, radio particle, ultrasonic, laser, diffusion and other progressive kinds of welding.

Intensification of ferrous metallurgy presupposes increasing the proportion of capital investments in the development of the so-called fourth (and subsequent) division. Such a structural advance means expansion of deliveries of rolling and thermal equipment with limited procurements, for example, of blast furnace equipment.

In machine building itself it will be necessary to increase capital investments in specialized metallurgical production and in the processing of metals with pressure instead of cutting. To do this it is necessary to provide for more rapid increase in the deliveries of forge-press and progressive metallurgical equipment (part rolling machine tools and so forth), and productive smelting machines, with a relative reduction in the deliveries of metal cutting machine tools.

The prospects of new rolling processes are great for solving the problem of metal. Equipment for these is being created by the All-Union Scientific Research Institute of Metallurgical Machine Building. The Institute of Electric Welding imeni Ye. O. Paton of the Ukrainian SSR Academy of Sciences has developed very promising technology for welding. Next in line is the development of nonfurnace and nuclear metallurgy, which will require principally new technology from machine builders.

Technical Equipment for Technologies for the Protection of Nature

Efficient utilization of production wastes makes it possible not only to expend mineral, forest and other resources thriftly, but also to limit the pollution of the environment and to save on fuel and energy.

Foreign specialists think that legislative measures for reducing pollution of the environment adopted in the United States in the 1970's led to increased capital-intensiveness and outlays in production. The reason is primarily that the fight against wastes was not combined with effective processing there. This should be kept in mind when planning environmental protection measures, the more so since reserves for the utilization of production and household wastes in the national economy are great.

An investigation conducted by the USSR State Committee for Science and Technology at one of the large machine building plants showed that the potential possibilities of economizing on fuel at the plant amount to 75,000 tons of conventional fuel (approximately one-third of the volume consumed). But actually 20,000

tons are being saved, that is, less than one-fourth of the potential possibilities are being utilized, and this is only during the period of the heating season. But why does the plant lose so much secondary fuel? Primarily because there are no salvage boilers in Marten and heating furnaces or installations for utilizing the fuel from low temperature sources.

The utilization of waste and scrap metal opens up fairly great possibilities of economizing on energy resources. According to estimates of Soviet and foreign specialists, the consumption of energy per 1 ton of aluminum made of scrap metal is one-twentieth-one-thirtieth the amount that is required when it is obtained from bauxites. Expenditures of energy on smelting secondary nickel are one-tenth, copper--one-sixth, and zinc--one-fourth the amount. The smelting of steel from scrap metal makes it possible to save more than 60 percent of the energy, and the production of paper from spoiled sheets--60-70 percent.* But here too,as practice shows, the amount of the savings depends decisively on the machine builders--on the deliveries of equipment for the preparation of secondary resources, particularly for pressing lightweight charges. Sufficient modern technology and technical equipment make it possible to achieve a similar effect when processing and utilizing used oil, glass wastes, secondary fibers, plastics and polyethylene, and household wastes.

In terms of salvaging wastes and utilizing secondary energy resources, the task of machine builders consists not only in solving today's problems, but also in promptly preparing for future requirements. As primary resources become exhausted and more expensive, it is necessary to turn with increasing frequency to the utilization of secondary resources. What is envisioned in this respect under the 11th Five-Year Plan?

The output of salvage boilers will increase approximately 1.5-fold, and gas purification and dust removal equipment--by 22 percent. There will be a 14 percent increase in the production of machines for urban municipal services, equipment for purification installations, and municipal water lines and sewerage. In 1980 only one set of equipment was manufactured for plants that process and burn garbage and for garbage transshipment stations In 1985 it is intended to put three such sets of equipment into operation. But if one takes into account that industrial products will increase by 28 percent during 1981-1985 and that the urban population will increase, the planned rates of production of equipment for removing, transporting and processing industrial and household wastes are clearly inadequate. The time has come to think not only about providing technical equipment for traditional means, but also about creating scientific stockpiles of principally new technical equipment and technology for effective salvaging of wastes. As Soviet and foreign experience shows, the center of attention is shifting from removing, destroying and burying to utilizing repeatedly, recirculating and salvaging.

Take, for example, household wastes. Quite recently they were shipped to city dumps. This required many garbage trucks. As large cities grew it became clear that the problem could not be solved this way. It is necessary to have

*PLANOVOYE KHOZYAYSTVO, 1981, No 6, p 83.

special technical equipment, particularly large hydraulic presses for packing the garbage and equipment for separating solid wastes, especially metals, and also mainline transportation equipment. The need arose for transshipment stations with special lifting and transportation equipment. The plants for burning garbage can be equipped for regeneration of the heat of the exhaust gases. A more radical step in the processing of household wastes is high-temperature nonoxidizing burning of them in order to obtain fuel gas and oils, to hydrolize ethyl alcohol and other useful materials.

In the world as a whole they have created and are conducting experimental testing on simple systems for burning household wastes as fuel in electric power stations and in furnaces for roasting cinders. Here wastes replace 15 percent of the fuel. The necessary equipment includes means for crushing wastes, a powerful air separator, and means for pneumatic feeding of fuel fractions into a modified boiler or a cement furnace.

As for production wastes, in spite of the significant achievements, domestic machine building still does not produce in series gas and dust purification or water purification equipment, for example, dust removers for blast furnaces, collectors of polluted gas from sinter machines, certain types of cyclone and bag filters, nossle, bored, inset and centrifugal scrubbers, Venturi tubes, wet dust removers, drop removers and so forth. The task consists not only in increasing the output of such equipment, but also in creating scientific stockpiles of progressive technical equipment.

In order for machine builders to promptly prepare for deliveries of implements of labor for technologies involved in processing household and industrial wastes, it would be expedient to develop a special-purpose comprehensive scientific and technical program. Now the majority of European countries are using special-purpose subsidies for investigating systems to regenerate resources. In France the ministry for the quality of life is conducting a program of research on problems of resource preservation and recirculation, the responsibility for which has been placed on the National Agency for Regeneration of Materials and Removals of Waste which was created in 1976. In the United States the national program for research and development on salvaging solid wastes was ratified by law in 1965.

But the basic solution to the problem of wastes lies in creating waste-free industries, so that raw material is utilized completely and comprehensively. The creation of these industries is one of the most complicated and responsible tasks. It is difficult to overestimate the role of machine building in carrying it out.

Scientific Stockpile for Mechanization of Labor

Mechanization of labor is a responsible socio-economic task for the theory and practice of machine building. Mechanization of lifting and transportation, loading and unloading and warehouse work in industry, agriculture, transportation, finishing work in construction, many processes in animal husbandry and crop growing, and timber procurements provides especially great possibilities for releasing employees. According to calculations, here it is possible to

release 20-25 million people. In 1981-1985 the output of lifting and transportation equipment is to increase by 33 percent. The production of progressive kinds of technical equipment such as loaders and electric cars is to increase even more rapidly--160 percent, and the output of containers is to increase 2.3-fold. But even such rates are considered inadequate to reach the earmarked goal.

The greatest effect should be expected not simply from increasing the output of traditional machines, but from disseminating the new, most productive lifting and transportation equipment. It will be necessary to arrange the output of cranes and other kinds of intrashop transportation that is equipped with automatic graspers and manipulators which are controlled by electronic computers and microcomputers. Highly maneuverable equipment is being created for individually packaged and extra-long cargo. Technical equipment is being designed for use in the north at temperatures down to -65 degrees Centrigrade. The increased output of tested models of lifting and transportation equipment and the assimilation of new equipment will make it possible to release 25-30 percent of the workers employed in manual labor in industry.

Special attention must be given to the creation of means of comprehensive mechanization of timber procurements and transportation of timber. Machine builders are faced with tasks of producing felling and skidding machines, knot cutting machines, machines for chockerless skidding of timber, and felling machines that are used with high-powered tractors. Timber procurement equipment should be created on a unified basis and at the same time it should be sufficiently varied in terms of technical and operational parameters in keeping with the conditions for its application. In order to facilitate the labor of timber procurement workers, it is intended to develop and introduce a set of machines for mechanization of warehouse work (crosscutting, sorting, and stacking of timber) with complete elimination of manual operations.

Mechanization of labor in construction depends on the activity of machine builders. Along with the traditional direction of technical progress-increasing the unit capacity of earth-moving and leveling machines--mechanization of concrete and finishing work as well as specific operations for renovation of existing enterprises come to the fore. It is intended to create and assimilate comprehensively mechanized means for laying concrete by the method of pneumatic sprinking and for applying inflatable forms. Construction workers will receive mobile painting stations for comprehensive mechanization of painting work. Construction instruments will be improved: electric wood screws, drills and so forth.

Machine Building for Machine Builders

In machine building itself the proportion of workers engaged in manual labor is significant. There is a great disparity in the level of mechanization of basic and auxiliary jobs: in basic production it is twice as great as in auxiliary production. Because of the underestimation of auxiliary work, capital investments and equipment are used primarily for mechanization and automation of basic production, even though the release of 1 worker from basic production requires 3-4 times more expenditures than from auxiliary production.

In the main shops of machine building enterprises the possibilities of mechanizing preparatory, assembly and machine productions as well as lifting and transportation work are also varied. In machine production this level is extremely high. But here too it can be raised as a result of introducing mechanized flowlines and also means of minor mechanization of lifting and transportation work: mobile conveyors, lifting and circulating tables, shelving and pulley blocks, hand carts, tilters and so forth. The present level of mechanization of lifting and transportation work (the proportion of operations performed by machines and mechanisms) in machine building enterprises is 80-90 percent. The plan for 1981-1985 envisions increasing it by approximately 3-4 points.

The degree of mechanization of labor in lifting and transportation work (the proportion of workers who operate machines and mechanisms) is considerably lower. In the majority of machine building enterprises it is at the level of 50 percent, in the Ministry of Machine Building for Light and the Food Industry and Household Appliances it is only 25 percent, and in the Ministry of Tractor and Agricultural Machine Building--34 percent. It will be necessary to raise the level of mechanization of labor in those machine building ministries where it is still low, at least to 50 percent. A further increase in this indicator in machine building will apparently become possible with the appearance of new means of mechanization with automated control.

In the basic machine building productions the mechanization of assembly work is the most promising. But this is also the most technically complicated area. The labor-intensiveness of assembly work is extremely great--30-50 percent of the overall labor-intensiveness of machine building products. Manual labor prevails here, and the level of mechanization and automation does not exceed 25 percent. In order to increase it significantly it is necessary to eliminate manual adjustment of assembled parts, and this means not only creating technical means of mechanization and automation of assembly work, but also increasing technological discipline and improving the quality of items and components. So far few means of mechanization and automation of assembly work are being created and produced.

Raising the technical level and improving the quality of machine building products, rapidly updating them and reducing the material-intensiveness require constant attention to the provision of the branch with instruments and technological fittings. But in the Ministry of the Machine Tool and Tool Building Industry the proportion of capital invesmtents in centralized production of instruments and technological fittings in the overal amount of capital investments has been decreasing by approximately 4 percentage points during the past three five-year plans. The proportion of specialized instruments and technological fittings that are being produced in machine building and metal processing products had droped 0.15 points by 1980 as compared to 1965. In view of the prospects for applying alloy steels with high and increased durability (with yield limits of 60-100 kilogram-force per square millimeter) in machine building, and also thermal processing of rolled metal, it is intended to increase the proportion of instruments made of synthetic superhard material in the overall output of hard alloy instruments to 2.7 percent by 1985. Machine tool building has been given the assignment of assimilating the production of synthetic diamonds in presses with a power of 2,000 ton-force and creating special new presses.

The list of the main economic problems toward whose solution the creation of new technical equipment is oriented can be augmented and continued. It is clear, however, that there is a need to rearrange the areas of research and experimental design developments as well as the structure of machine building production in keeping with the dynamic social needs. Machine builders should promptly prepare for changes in the nature of their work, without giving in to the temptation of routinely improving technical equipment that is hopelessly outdated. For, as the aphorism goes, "the worst sin is to do a little bit better that which need not be done at all."

The Cost and Quality of New Technical Equipment

The cost of new machines per unit of the efficiency factor should be less than that of old ones. Otherwise technical progress would end up as regression. In the interest of economizing on capital investments it is necessary to achieve a reduction in the cost of technical equipment per unit of productivity. Under the past five-year plan the cost of the majority of kinds of machines and equipment increased. The output of technical equipment in value terms (even in the so-called constant prices) in 1978-1980 increased more rapidly than it did in units of capacity. The index of increased cost thus constructed amounted to 14 percent for tractors, 17 percent for trucks, 24 percent for bulldozers and 8 percent for mainline locomotives.

On an average for a large group of domestically produced technical equipment that was investigated (about 20 percent of the output) the cost per unit of productivity increased by 15 percent during 1976-1980. True, imported machines and equipment, whose proportion in the new implements of labor increased sharply during the past five-year plan and reached almost one-third, is even more expensive. As analysis of the plans has shown, capital investments in imported technical equipment subsequently produce one-half-one-fourth the amount of products that expenditures on similar machines and equipment that are domestically produced do. Because of the lack of the appropriate raw material or violations of other conditions, sometimes only part of the potential possibilities of technical equipment produced abroad are realized.

The overall increase in the cost of domestic and imported equipment during 1976-1980 amounted to 32 percent, that is, it took place more rapidly than did industrial capital investments in the national economy. In other words, the increase in capital investments went to cover the increased costs, which amounted to an absolute reduction of the startup of production capacities. The aggregate index of the startup of capacities in the second half of the 1970's as compared to the five-year period of 1971-1975 was appreciably less than 1. And the reduction of the startup of capacities creates prerequisites for a subsequent reduction of the rates of economic growth.

The national economy needs less expensive and at the same time better technical equipment. Machine building is faced with the task of improving the quality of equipment, which will make it possible not only to raise the technical level of the production apparatus, but also to limit the imports of costly equipment and at the same time reduce the cost of machines per unit of their productivity.

How realistic is this task?

First, the technology and organization of machine building production reveal large reserves for reducing current expenditures. Among them are improvement of the utilization of metal as a result of developing waste-free and reduced-waste technologies, mechanization of labor-intensive assembly operations, effective specialization, standardization and cooperation in the production of machines.

Second, a considerable reduction of the cost of implements of labor can be achieved as a result of expanding their type characteristics and making the operating parameters of equipment closer to the specific conditions for operation. To do this machine builders must expand the range of output of specialized equipment. Of course, this equipment will be less expensive only if its variants are designed on the basis of a unified base model. This approach will make it possible not only to make equipment less expensive, but also to avoid additional expenditures because of the small series of manufacture of large variants of technical equipment.

Third, automation is a prerequisite for improving working conditions and solving the problem of highly skilled personnel. Without automation, as a rule, it is impossible to intensify technologies: to increase the speeds, the weights of billets, and so forth. But the utilization of automatic equipment involves a number of specific conditions. Otherwise there is an unjustified increase in the capital-intensiveness of production.

Take, for example, metal cutting machine tools with numerical program control. Our country holds first place both in their production and in the number of them available. The increased output of machine tools with numerical program control during the past 10 years increased the average cost of the metal cutting machine tool from 5,000-6,000 to 9,000 rubles in 1980. By 1985 the average cost will reach 14,700 rubles, that is, a 1.6-fold increase during 5 years. Additionally, there are unfavorable phenomena in the utilization of machine tools with numerical program control. The coefficient of shift work is lower with them than with ordinary machine tools, and some of the machine tools are used for processing mass parts, where their advantages over less costly equipment are not revealed. Less expensive metal cutting machine tools are written off after an average of 18 years of operation, and machine tools with numerical program control--after 10 years. Therefore it is necessary to bring the production of machine tools with numerical program control, robots and other extremely costly equipment in line with the value and durability of the electronic components and with the actual conditions for their operation (supply of instruments, special servicing, programs and so forth). Here is another reserve for reducing the cost of implements of labor.

Fourth, developers and manufacturers of new technical equipment sometimes increase production outlays and prices. This happens especially frequently with individual manufacture of machines, when they are paid for not according to price lists, but on the basis of contractual prices. Here limit prices can play a normative role. Price setting should recognize as socially necessary not the actual production outlays, but only the socially necessary expenditures,

not allowing losses because of the obsolesence of technology or the imperfection of designs.

The quality of a new machine is determined not only by the level of the production cost and the limit price per unit of productivity, but also by such technical and economic indicators as the expenditure of fuel and energy per unit of useful work, reliability and durability, mass productivity, the ergonomic and certain other parameters which are specific for each kind of technical equipment. Improvement of one parameter is frequently achieved at the expense of another. For example, the indicator of mass productivity can be improved at the cost of limiting reliability and durability. In exactly this way expenditures on production and the cost of the machine can be reduced at the expense of its other qualities.

In order to select the best variant it is necessary to do careful economic research. The creator of new equipment needs a clear-cut order for the parameters of the future equipment. The level of the best domestic and foreign analogues cannot always serve as a model for forming the order. Such an orientation frequently leads to the creation of technical equipment whose characteristics exceed the actual operational requirement. Excessive parameters of machines under specific operating conditions do not produce the expected socio-economic effect.

Practice gives numerous examples of excessive parameters that coexist with inadequate quality. These include universal metal cutting machine tools whose working space and engine capacity many consumers utilize by only 40-60 percent, and superpowerful blast furnaces--for a number of objective reasons their economic indicators sometimes turn out to be lower than the less powerful ones. "Maximalism" in automation, as we can see from the example of the machine tools with numerical program control, leads to inadequate utilization of technical equipment. Excessive reliability and durability of implements of labor, because of the presumed acceleration of their updating, can also be excessively costly.

The capabilities of science and design bureaus, the capacities of machine building and metallurgy and the capital investments in equipment are not unlimited. Therefore additional expenditures on the creation and production of machines with excessive parameters ends up in depleting those resources which could be used to eliminate the actual deficiency of quality. The orientation of developers toward unnecessary originality, "pretty" technological decisions and "records" frequently leads to large losses of scientific and investment resources.

The social requirements on quality of new technical equipment, it seems, can be reflected in these principles:

the selection and justification of the priority of subjects for NIOKR, based on national economic programs and long-range socio-economic problems;

the determination of priority technical and economic parameters for technical equipment;

the rejection of evaluating the quality of scientific developments only on the basis of their comparison with the best domestic and foreign analogues;

not maximization, but optimization of the technical specifications of new implements of labor and technologies.

Filling the national economic order for new technical equipment will depend largely on the utilization of the immense scientific potential of machine building and the reorientation of NIOKR toward solving key problems as well as the reorientation of the specifications of newly created implements of labor toward concrete demands and working conditions of the actual consumer.



11772
CSO: 1820/169

PROBLEMS, POTENTIAL OF PLANT DESIGNERS EXAMINED

Novosibirsk EKO: EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA in Russian No 7, Jul 83 (signed to press 2 June 1983) pp 20-35

/Article by K. F. Kostin, deputy head designer for hydrogenerators of the Uralelektrotyazhmash Plant imeni V. I. Lenin, winner of USSR State Prize (Sverdlovsk): "The Plant Designer: Position, Problems and Possibilities"/

/Text/ The ancient Greek philosopher Proklos said: Until man is 50 years old he looks only forward, and after that he beings to look backward. I have been dealing with hydrogenerators for more than 50 years, I was a participant in the establishment and development of domestic electric machine building, and I should like to share certain ideas about the profession of a designer. During these years domestic energy engineering and the electrical industry have traveled an extremely long path from hydrogenerators for the Volkhovskaya GES with a capacity of 7,000 kilowatts and a weight of 250 tons to such unique giants as electricity machines for the Sayano-Shushenskaya GES with a capacity of 640,000 kilowatts and weighing 1,860 tons. And tomorrow, in order to utilize the energy of the mighty rivers of Siberia and the southeastern regions of our country, it will be necessary to have electric machines with a capacity of a million kilowatts. Atomic energy is gathering force, and only about a quarter of a century has passed since the first light bulbs began to burn with atomic energy in Obninsk near Moscow, when steam appeared from the overflow pipe and academician A. P. Aleksandrov said to I. V. Kurchatov, the well-known words: "With a light steam, Igor! Vasil'yevich!"

But the consumption of energy has increased sharply as well: it doubles every 15-20 years. Consequently it is necessary to wage a tough battle for economizing on the expenditure of fuel and electric energy. Immense unutilized reserves lie here, and it is difficult to overestimate the role of the designer in discovering them. One of the main indicators of the quality of new electrical machines should be the efficiency factor, and also the minimum consumption of electric energy to service this equipment and to satisfy one's own needs. The importance of this task is shown by this fact: 14.7 percent of the electric energy produced by electric power stations of the USSR is taken up for their own needs and in losses on electric power transmission lines. This amounts to 182.6 billion kilowatt-hours a year, that is, more than is consumed in municipal and household services for all of the cities of our country.

When we are dealing with large new ideas and principally new design decisions their fate is determined by the economic effectiveness in the national economy. Economy has the final word, it is our main arbitrator. Thus the designer is one of the key figures in scientific and technical progress.

Unfortunately, in recent years, the profession of the designer has been losing its significance in many areas of production. Let us try to figure out why this is taking place.

How the Labor of the Designer is Evaluated

His task is to create new machines which will provide for progress in technology. Every new model should contain better decisions, for otherwise it will only be a copy of what has already been discovered at one time. Here the designer should be a good economist who is aware of the technical policy of the enterprise and the main directions for the development of science and technology not only in his own area, but also in related ones. Let us look now at the indicators used to evaluate the labor of the designer.

There are many indicators that characterize the quality of items: the efficiency factor, the material-intensiveness, the technological level, the durability, the sizes, the labor-intensiveness of production and so forth. But the most important one is almost not taken into account--this is the final effect for the national economy. Sometimes it reaches a point where in certain planning organizations, and in plants too, the work of the designer is evaluated in terms of the number of blueprints that are drawn up, that is, as if in terms of the number of square meters of Watman paper that are filled up!

The designer is a worker at the enterprise and he has his own limited interests, above all, reducing labor-intensiveness and material-intensiveness. He is praised or condemned for these indicators, he can receive material remuneration for improving them, but he has been practically deprived of incentives for increasing the national economic effectiveness of the items he has created. If he does manage to receive these remunerations, it is extremely rarely. Each year the design bureau receives a plan for reducing labor-intensiveness and economizing on materials. Nobody can deny the correctness of this requirement, but still the concrete figures for reducing the number of tons or reducing the number of norm-hours has no scientifically substantiated base. They say that it is necessary, and that is all. The failure to meet this requirement is punished more severely than any other violations of production discipline. Therefore the designers break their necks to make sure that these indicators look good enough. Unfortunately, in a number of cases achieving this causes harm to the main thing--the national economic effect: the durability or operational reliability decreases. There are also cases when they have just begun to produce a set of technical specifications for a new machine which has passed through all stages of consideration and approval and immediately a plan is presented for reducing labor-intensiveness and economizing on materials. Perhaps it is precisely because of this that somewhat increased allowances are included in a new item, so that later, by removing them, one can fulfill the plan for economy?

Now industry and construction consume about 700 billion kilowatt-hours of energy each year, which amounts to a little more than half of the overall production of it. It goes mainly for technological needs and this characterizes the energy-intensiveness of items when they are being manufactured. But when the technical specifications are submitted to production, this indicator is not taken into account. It is absolutely necessary to pay attention to it when evaluating the labor of the designer.

I think that design activity should be evaluated primarily on the basis of how the item operates for the client and meets all the parameters indicated in the certificate or technical specifications.

Taking Vocation and Capabilities Into Account

The art of a designer who creates new machines consists in the ability to embody scientific-technical and production achievements in the design of items correctly and promptly. Toward what do the creators of machines, and primarily designers, strive? To include in their brainchild identical reserves of durability in all components and parts. Such is the ideal machine, which is harmoneous in terms of conditions of durability and the most economical in terms of the expenditure of materials. Unfortunately, not all elements and components of a machine yield to calculations and it is difficult to take into account ahead of time various factors that influence its reliability. A great deal is determined by the experience of the designer, intuition, approximate calculations, a feeling of harmony and other "unscientific" methods, which are cast in a fairly convincing, if also streamlined formulation--"out of design considerations." But these "considerations" differ for everyone and they depend largely on the natural talent of the designer.

A well-known American inventor, Thomas Edison, said: "Anyone with a desire, average capabilities and material opportunities can be an engineer, but one must be born a designer." In my opinion, there is some truth in this statement. Incidentally, Edison himself did not have an engineering education.

Experience confirms that a good engineer with a diploma can be an average designer, but a good designer is a terrible engineer--since they are not the same thing.

Thus it is especially important to select designer specialists, a process which should take into account vocation, capabilities and the desire to work in this area. But who takes into account the inclination of a young person toward design work, and where and when? Who gives him the skills of spatial imagination and the rudiments of design work? The institutes and tekhnikums train intelligent engineers and technicians, but not designers. Frequently the fate of young specialists is determined very simply. They come from the institute and are sent to the personnel division of the plant, and here it is quickly decided who should be what: "You, Petrov, will go to work in the design bureau, you, Sidorov, go to the technological division, and you, Ivanov, into production." Sometimes, of course, the desire of the young specialist is taken into account. But there are also cases in which the desires of the young person are not yet formed. Sometimes a graduate is sent to one division or another depending on the grades he received in the VUZ. But it is possible to

draw extremely well and not become a designer, but only an intelligent detail draftsman. A spatial imagination, intuition and a sense of harmony are inherent in a person by nature, but they must be revealed and developed, for otherwise a real designer will hardly emerge. So simply by looking at a person and talking with him it is difficult to come to a conclusion about his suitability for design work.

I personally have simply been lucky in life. I have been lucky because . . . of my tall height. How this could be will probably surprise the reader. And so . . . in October 1929 three young specialists stood at attention before the technical director of the Leningrad Elektrosila plant, who was subsequently to be a corresponding member of the USSR Academy of Sciences, Aleksandr Yemel'yanovich Alekseyev, one of the guiding lights of domestic electrical machine building. He had just returned from America where he learned about the experience in the design and production of hydrogenerators. We were waiting for our appointments and the determination of our destinies. I did not know in which field I should invest my efforts. My spirit was drawn to nature. I was an ardent hunter, fisherman and mushroom hunter. I had written simple hunting stories and printed them in magazines--which of us in younger years has not dreamed of becoming a writer or a poet. But reason drew me to technology. I did not know what I was capable of and there was nobody with whom to consult.

"What is your name?" A. Ye. Alekseyev addressed me.

I answered.

"Well, you are very tall, and therefore you will design the largest machines--hydrogenerators."

It is understandable that not everyone can count on such a fortunate occurrance. It is necessary to have a system for training designers. To do this it would be expedient, in my opinion, to create departments and courses in VUZ's with a program which includes design training.

Why Is Our Profession Losing Prestige?

The moral and psychological factor is of no small significance, and the profession of the designer is losing its prestige and respect from those around him. The figure of the designer is paling. He is losing confidence in the significance of his profession, and this is dangerous for the future.

The interests of the designer and the administration of the plant frequently do not coincide. We live in the future and create new items which will be materialized in a year, two or more, but we do not participate much in the fulfillment of the production plan for the current month. The administration is absorbed with concerns about how to fulfill the plan. And if they receive orders to send people for outside work, the first to go are the designers, technologists and researchers. And what happens then will be clear when they get there. And it turns out as Nekrasov put it" On Monday Savka is a miller, on Tuesday he is a harness maker, and from Wednesday until Thursday Savka is in the service combine . . .

In our plant the designers spend about 15 percent of their annual working time on jobs which are not their own, and they are employed in entirely inappropriate specialties. But since each design bureau has older people, mothers with many children or who are breadwinners and people with medical passes who are released from physical work, the young able-bodied members of the collective have considerably more work outside the bureau. They send us everywhere! To clean up the plant area and residential sections, to build the preventive medicine clinic, residential buildings, public buildings, purification installations, hog farms, vegetable storehouses, into the shops at working positions, and so forth. Would it not be better to reduce the staffs of the design bureaus, technologists and researchers by 10-15 percent, but not take those who remain for subsidiary work which require no education or experience?! It is possible not to reduce the number of designers, but then to use them for designing mechanisms and adaptors that facilitate or replace manual labor, that is, to use them in their specialty. Technical progress is provided mainly as a result of the quality of the labor of specialists, and not their quantity . . . Talented designers must be supported, evaluated according to their merits, and conditions must be created for their fruitful work. The directors of the enterprise play no small role in this.

During my long career I have had occasion to work side by side with 13 directors. Once, it seems that it was with the eighth director, when we had very rigid deadlines for designing and manufacturing powerful vertical electric engines for pumping stations for the Volga-Don shipping canal and also a whole number of new hydrogenerators, I went to him to request that he add staff units to the design bureau. This director, who, incidentally, was certainly not a bad one, answered me:

"Well, Konstantin Fedorovich, why submit documents for new designers; I will give instructions to send you 30 or 40 people for the time being from production, those who can draw, and they will quickly draw blueprints for you both for engines and for hydrogenerators . . ."

Of course, I refused this assistance.

Among designers who work at enterprises one rarely encounters specialists with the degree of a candidate, not to mention a doctor of technical sciences. Why? After all, do designers not have significant creative successes? They do. Then what is the matter? The fact is that the conditions for preparing and defending a dissertation are incomparably more complicated for plant specialists. The plant specialist who has valuable material for a dissertation finds it more difficult to formulate it since he has almost no time or opportunity for such nonplanned work. In training institutions and planning and scientific research institutes these opportunities are greater. There the planning work and the subject of the dissertation are frequently the same thing. Therefore it happens that engineers or scientific workers come to the plant from some scientific organization and ask for suggestions on a subject or materials for dissertation work.

Hence the paradox: many dissertations in the area of technology are not applied in practice, and many perfected mechanisms which are the pride of domestic machine building are created by people without degrees. As an example one can give the activity of Nikolay Pavlovich Tugarinov. He is a well-known specialist in the area of large-scale electrical machine building and especially in the area of mechanical calculations. His contribution to technical progress in this area is greater than that of dozens of other "degreeded" individuals.

There is no need to save on designers. Here is one example. At the Uralelektrotyazhmash plant there is a branch of the Ural polytechnical institute which trains speciaists for the plant. There are many production workers studying in the evening division. It is not easy to work at a machine tool during the day and to study in the evening. After 5 years of such hard work the former machine tool operator Vasya receives a diploma and comes to the design or technological bureau.

The head designer is glad to see him--this is a valuable addition, not simply a young specialist, but a person who has work tenure in production! And then it turns out that the largest paycheck Vasiliy Petrovich can receive is 120 rubles. And at the machine tool he earned 250-300 rubles. What is Vasiliy Petrovich's position as head of the family: how will his wife take such a reduction of the family's budget? One cannot be satisfied with attractive work alone . . . of course there are certain prospects--within 2-4 years the salary can be increased somewhat. Moreover, there is the hope of obtaining a bonus for fulfillment of the plan for new technical equipment, but this additional payment is so miserly that it is embarrasing even to talk about it. Moreover, it is distributed according to the principle of wage leveling and not according to the personal contribution. One joker at the plant asked me at a meeting: "And why did they give me a bonus for new technical equipment? I had nothing to do with it . . ."

Is this not why the occupation of a designer which was once a male occupation is beginning to turn into a female occupation? Now no less than half of the staff in any design bureau are women. If this continues the male designer will have to be entered in the "Red Book."

What does this lead to? The professional qualities of a designer are beginning to drecrease. It is more difficult for women to grow. They have domestic concerns, they stay home more frequently because of diseases of their children, they are almost never present during the assembly of equipment or in emergency situations, that is, in places where a male nature is needed. Incidentally, it is thought that women have one important advantage: they do not react so painfully to the relatively low level of earnings.

The Role of the Head Designer

He is the one who provides the main diagram for the future machine, its main component decisions and even its external appearance. This was wittily discussed by the well-known aircraft designer S. A. Lavochkin: "The general designer should turn over the first stone--the one with which the landslide begins." In this landslide of all kinds of suggestions the head designer must

select the best variants and develop and augment them. Of course, in order to do this he must have a braod and sufficiently profound erudition. The head designer is the leader of a highly skilled collective. He does not simply select, but also edcuates and inflames with creative enthusiasm those people who create new machines.

He has many duties and a great deal of responsibility is placed on him. He is entrusted with the planning of unique machines valued at millions of rubles. But his rights are extremely small. It is very difficult to fire a negligent or incpable designer, and it is even more difficult to include additional ones on the staff or to increase the wages for a specialist who is capable and growing. There are two solutions to the problem: either a good specialist is released or he is promoted to the rank of chief. But there are more good specialists who deserve higher earnings than there are supervisory positions, and moreover, one can be an excellent designer but a poor administrator and leader. Briefly, we can certainly not always pay for the labor of the designer in terms of his actual contribution, and the head designer does not have the right to do this. I express the opinion of many of my colleagues when I say: give the head designer the wage fund and trust him to distribute it within the limits of this fund, for he bears immense responsibility for his work front.

But he is not entrusted with it. One hears such conclusions:

"Why do you need additional people on the staff? So far you have not failed to meet planning deadlines for submitting technical specifications to production . . ."

Let us note that many foreign firms during periods of crisis situations fire whoever they will, but not their "golden fund" of designers. Unfortunately, workers in the division of labor and wages do not always understand the role of representatives of this profession in the life of the enterprise. Some of them reduce it to the absurd, attaching to the designer the label of "overhead expenditure."

The designer must submit technical specifications on time, for otherwise the plant's production plan will be disrupted. And he does this, but at what price? Through overtime work and, the saddest thing, through inadequate consideration of design decisions of individual components, decisions that are less than optimal, and sometimes even mistakes that are made during a frenzy. And in the final anaylsis this leads to a reduction of the quality of the design of the future item, which sometimes is very costly to the national economy.

Technical and Organizational Obstacles

Frequently design bureaus do not have the necessary experimental base. Even we do not have it. And yet Uralelektrotyazhmash is the flagship of Ural electrical machine building. The plant creates unique hydrogenerators, and it is the only one in the country that produces such machines as synchronic compensators, electric engines for pumping stations in irrigation systems, for circulating pumps in atomic electric power stations and other large electrical machines. For dozens of years there has been a flood of sympathy,

understanding of the need, promises and even plans--but no progress! When design of machines include principally new and progressive decisions, in a number of cases it is necessary to take a risk and waste time and money to bring them to the clients or, like a cuckoo, to place our eggs in someone else's nest, that is, to conclude agreements with other organizations to conduct experiments and research. And this takes a lot of time and money. Yet the rapidity and efficiency of introducing new ideas and design decisions constitute one of the main levers in technical progress in any area of machine building, for otherwise by the time they are realized new ideas turn into last year's snow. We are waiting for a solution to this problem from the USSR Ministry of the Electrical Equipment Industry.

The work of designers is also complicated by poorly considered organizational decisions. Here is an example. The introduction of the YeSKD (unified system of design documentation) is an intelligent measure on the whole. This system is intended for series and mass production, but it has extremely complicated the planning and production of individual items. If before the introduction of the YeSKD at our plant we required 10 and a half months for designing and manufacturing hydrogenerators with a capacity of 150,000 kilowatts (then it was the most powerful one in world practice), now it takes no less than 2 years for similar work. Then we managed to do this as a result of developing and introducing the method of parallel-sequential planning and production. Now, after the introduction of the YeSKD we cannot utilize this.

For items created according to individual designs, this system should be simplified and improved, taking into account the specific features of individual production. The YeSKD was approved by the USSR State Committee for Standards. Naturally, only this organization can make adjustments for items with individual planning and production.

Looking Backward . . .

The role of designer should not be limited only to developing new items. Life has shown that they can and should participate actively in searching out new organizational forms for accelerating the process from the beginning of working planning to submitting the final product to the client, and also they can contribute to increasing the economic effectiveness of equipment.

I shall give a couple of examples.

The year 1940 came along. At the Leningrad Elektrosila plant they planned a new hydrogenerator for the electric power station on the Vuoksa River. Within 9-10 months it was necessary to complete the construction of the station and to provide industrial electric current to the Lenenergo system, which was extremely in need of additional power. They tried to order 4 hydrogenerators with a capacity of 24,000 kilowatts each from foreign firms. One was able to do this in 2 years, and another in 22 months. These time periods did not suit us. The Leningrad Oblast party committee set for the plant the task of designing and manufacturing the first hydrogenerators in 8 months, and the next ones were to be submitted every 2 months. I was appointed head designer for these machines.

The usual method of sequential planning and production of hydrogenerators was unacceptable. It was necessary to find new forms. That was when we originated the idea of parallel-sequential organization of planning, technological preparation and production of hydrogenerators. Its essence amounted to the following: working blueprints are submitte d for production under the policy of the technological sequence for manufacturing machines and taking their labor-intensiveness into account. The blueprints were produced first for large forged pieces, steel castings, special materials and batching equipment. These orders were placed with other enterprises. Then blueprints began to come in for parts that require the manufacture of special fittings, stamps and adaptors. After this the designs were for large welded elements, and then their mechanical processing and, finally, their assembly, and also secondary nonlabor-intensive components and parts.

The development of blueprints was essentially carried out in parallel with production. The advancement in time was not great. Therefore, when submitting blueprints to production for welded parts the designers had to have a good idea of all stages of subsequent mechanical processing of these parts and the interconnection of individual components, since there was no time to make adjustments.

Such organization is possible only in a smoothly operating, experienced and highly qualified design collective. Special responsibility lay on the shoulders of the designers. The first machine for the GES on the Vuoksa was sent to the client on time.

Subsequently we successfully applied the method of parallel-sequential planning and production in the Ural area. After the war we used it for manufacturing vertical engines when creating hydrogenerators with a capacity of 150,000 kilowatts. Incidentally, at that time these machines were the most powerful in world practice and only a year later did the more powerful generators for the Bratskaya GES appear.

And another example. At the end of 1942 a decision was made concerning the construction in the shortest possible period of time of an entire series of small hydroelectric power stations in the Ural area and in Central Asia. The plant (at that time it was called Uralelektroapparat) was assigned to create for these electric power stations hydrogenerators with various amounts of voltage, frequency of revolution and capacity to work with various types of hydroturbines. Before this, both here and abroad hydrogenerators were designed for individual machines with concrete technical specifications for a given GES. The war dictated its own laws. Electric energy was needed, and quickly. What was the solution to the problem? The time periods were short and the personnel were not very skilled. The provision of materials, procurements and batching equipment was not arranged. There was not enough technological or machine tool equipment, and the production spaces were limited.

We looked hard for new ways, argued and quarreled. Taking into account the great diversity of machines, we broke them down into 5 series, and each included machines with the same diameter of the stator core. Within each series we provided the broadest possible standardization of components, parts, materials, production fittings, instruments and batching items. For example, in the first

series there were 12 types of machines,and of the 650 varieties of parts 550 were identical. Many parts in individual series were standardized in the same way.

We worked together with the designers of hydraulic turbines and the planners of the hydroelectric power stations. Thus we opened up the path to creating standard GES's with small capacities and a complete set of standardized electrical energy equipment, which, to a considerable degree, made it possible to reduce the time periods for design and construction.

A second and no less important task with which we were faced was to find design and technological decisions that were adapted to the difficult conditions of war time. As we know, necessity is the mother of invention and ingenuity. Beginning with the development of the overall composition and right down to the smallest parts, everything was subordinated to the major goal: to make a machine of good quality with high technical and economic indicators as quickly and simply as possible. The poor instrument base made it necessary to make do with the minimum quantity of stamps and adaptations, and the limited selection of materials required new design and technological decisions. At the end of 1943 two generators from the first series were manufactured, tested at the plant and shipped to the Alapayevskaya GES. After them came the production of subsequent series. The creation of standardized series of hydrogenerators laid a basis for their production in the Ural area, and many designers and workers earned the title of winners of the State Prize and were awarded orders and medals.

About 35 years have passed but these machines even now are a model of simplicity and expediency of design execution.

And so we designers are the connecting link between major science and production. There are many of us and therefore we produce an appreciable total economic effect for the national economy, but we could provide even more if certain impediments were eliminated.

It is necessary to ask a good deal of the designer, but it is also necessary to help him in order to increase his efficiency factor. "You reap what you sow."

I am not making any revelations in these notes. The majority of the most pressing problems have been raised in the press. But, unfortunately, so far there has been no improvement. I would like for the space of the "scissors" between what should be and what is in reality to be clos ed more quickly and for the figure of the designer to occupy a worthy position in the production system.

Perhaps some of my points can be disputed, while others may have been somewhat exaggerated or particular in nature, but each is the result of experience and contemplation. In the final analysis I am a "fan" of my team, I love and respect the profession and I wish it good health.



11772
CSO: 1820/169

VARIOUS ASPECTS OF 'MASIS' FOOTWEAR MANUFACTURING ASSOCIATION EXPLORED

REASONS FOR SUCCESS EXAMINED

Novosibirsk EKO: EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA in Russian No 7, Jul 83 (signed to press 2 June 1983) pp 36-41

/Article by Ye. B. Bykhovskiy, deputy chief of the administration for the development of the leather and footwear industry of the USSR Ministry of Light Industry (Moscow): "A Good Deal is Decided by Initiative"/

/Text/ The Masis association is not the largest in the footwear industry. Its output volume in physical terms amounted to 14.6 million pair of shoes in 1982. The Leningrad Skorokhod association produces 35 million pair a year. The Voroshilovgrad footwear association--32 million, and the Moscow Zarya--23 million pair. And 10 years ago the consumers did not even know about the Masis brand, while there are firms which for many decades have been a symbol of the achievements of of Soviet footwear workers. Moreover, in 1972, according to the results of a people's control inspection, it was necessary to apply the strictest sanctions against Masis for the poor quality of their products.

So how does one explain the present popularity of the Armenian footwear firm among consumers and the lively interest in it among colleagues?

The results achieved by the Masis workers in the past 10 years show how much can be done with initiative and an original approach to solving production problems. They have managed to take hold of the main thing that is necessary today in the footwear industry: the formation of an assortment that satisfies the needs of the consumers and the requirements of fashion. Their products are immediately sold out and therefore trade is glad to order them.

At Masis they began the work for improvement of the assortment with the organization of manual sewing of especially elegant footwear.

The solution turned out to be so different and unexpected in our age of scientific and technical progress that this approach seemed doubtful to certain specialists in the branch.

"This is a step backwards," said some people at conferences, "this means rejecting the achievements of mechanized flowline production!"

But the sense of the well-thought-out maneuver consisted in the following: to bring into the small series sections skilled cobblers, and with their assistance to create models of footwear which satisfied the demands of the consumers, to train the personnel and to advance further. The idea was quite successful. The footwear received a large market and orders began to come in from trade. But in addition to the economic effect, there was an immense social effect, whose significance is difficult to overestimate. The prestige of the profession increased, people began to believe in the forces and capabilities of the collective, and there was a stimulus toward creativity and research. This turned out to be especially important for designers who saw that their creative work was not useless--there were people for whom to produce the models that were created. The level of design work rose as did interest in the development of this service which for a long time had been inactive: the models were a thing unto themselves, and the monotonous undistinguished footwear on the flowlines was something else.

The branch supported the initiative of the Masis workers in the creation of sections for small series of hand sewing of especially elegant and fashionable footwear. In a number of cases their organization produced positive results. But at certain enterprises even in these sections they tried to sew footwear which was in no way distinguished from that which comes from the conveyors. Here is another proof that it is a matter not of form, but of the content with which it is filled.

I would like to give this example. Fairly recently I was in the Mogilev factory for children's footwear. I had heard a lot about it but I was mistrustful until I visited there. There is a youth collective here. Usually in these cases one has sympathy for the director: it is difficult for him with young, inexperienced personnel. The manager here was glad about that because this is the most favorable background for enthusiasm, research and a nonstandard approach to the matter. Many directors are afraid of partial replaceability of the models, and in all ways argue with suggestions from the branch about this, but the director of the Mogilev factory himself insists that next year they will not produce a single of last year's models. The collective supports him, and takes on the assimilation of new products with interest each time.

Those who are not afraid of departing from the standard, those who search for new ways, are those who are working with the future, with a surplus, and ahead of schedule. While some people, having become convinced of the usefulness of small series sections are choking with rapture, the Masis workers are organizing the production of especially elegant footwear on mechanized flowlines. Having raised the level of modeling and the skills of the personnel, they have combined these achievements with the possibilities of mechanized production. And there are immense possibilities. Footwear technology has accumulated a solid arsenal of methods and technical means, and they must be utilized intelligently.

The Masis experience in producing especially elegant and fashionable footwear by the mechanized method was approved by the board of the Ministry of Light Industry and recommended for introduction. Two all-union schools of advanced labor methods for workers in the footwear industry were conducted in Yerevan in order to disseminate this experience.

Nobody created any special conditions for Masis. Its experience was not accumulated in a hothouse situation. On the contrary, when the Masis workers began to work on improving the assortment, they were in a much less favorable position than were the large enterprises which at that time were considerably better supplied with modern domestic and imported equipment. At first Masis demonstrated with old equipment what it could do, and only after this was there a desire to help, to carry out technical renovation and a certain amount of new construction, since the return from it appeared to be obvious. Two new factories were constructed, the head factory was renovated, and a specialized factory was created for producing especially elegant footwear by the mechanical and manual means--Yerevan factory No 6.

In 1981 the Obuv'-81 international exhibit was held in Yerevan. The republic was selected as the place for the exhibit not by chance and certainly not because it took the initiative and offered its services. In Armenia it was possible to show the level of work achieved in footwear production. Naturally, after the exhibit some of the equipment demonstrated by foreign firms was purchased for Masis.

The association's nonstandard approach is also manifested in solving problems of centralization of production, cooperation and specialization. What is more advantageous: to sew 200,000 or 2,000 pair of shoes on the flowline? It would seem that large batches would be more advantageous for production. The flowline was constructed and set in motion! But the demand? It too must be taken into account when calculating the effect. Therefore the Masis workers organize flexible production of small batches of footwear with partial interchangeability of the models. This too is one of the reasons why the footwear does not pile up in the stores.

Partial interchangeability of models requires a high level of preparation of production. Here the work is conducted according to network schedules. No more than 10-14 days are envisioned for the introduction of a new model. No other footwear association in the country has such rates yet. The Masis experience is extremely instructive.

The objective indicators of the operation of the enterprise show that as of today it has occupied the position of one of the leaders in the branch. While the overall production volume during 1979-1982 increased 1.6-fold, the volume of especially elegant footwear increased 6-fold. The output of products of grade I at Masis amounts to 94.8 percent, while on the average for the branch it is 92.5 percent, and in Armenia about 75 percent of the footwear is produced with the index N (innovation). This is the highest indicator in the sub-branch, and the average for the footwear industry amounts to 27 percent. The level of claims for replacements in Masis is 1.25 percent, and in the branch as a whole--2.3 percent. Masis workers produce 53 percent of the footwear with the Emblem of Quality or subject to certification, while the average for the branch is 22.7 percent.

One-third of the footwear manufactured by the association is especially fashionable and elegant footwear for which there is an increased demand. This is also the highest indicator in the branch. In terms of modeling, organization of

production and formation of the assortment of footwear, taking into account the demands of the consumer, the association has considerably outstripped many others.

But all that has been said previously does not mean that the Masis association has already solved all of its problems.

To what was it necessary to devote primary attention? The level of fulfillment of technological operations. It is the same as it is for other footwear workers. It is no worse than theirs, but it is no better either. And here it is important not to be seduced by the fact that trade partners are much more willing to work with Masis than with other associations. Trade is pleased by the fact that it receives models of footwear which attract the consumer, because they are in fashion, even though the level of their execution is the same as for others. But the footwear that is in daily demand, both in terms of modeling and in terms of execution is still not up with the fashion. For this we criticize Masis and think that by the end of the 11th Five-Year Plan it must solve this problem too.

The orientation toward the consumer and the satisfaction of his demands certainly does not mean following any tastes. Good taste must be developed. And it sometimes happens that sewing workers and footwear wo rkers and knitwear workers indulge in bad taste for the sake of sales. Nor is Masis without these shortcomings. For instance, in order to satisfy the fashion conscious it sometimes offers women's shoes with excessively high heels.

But with all the problems which arise at Masis, it still has the main thing--initiative and research. Initiative can always be directed into another branch, by eliminating or changing something. It is worse when there is no initiative, when it must be instilled. There are still so many enterprises which are extremely inventive in justifying their inactivity and lack of initiative. They speak of raw material, the quality of accessories and the lack of means of technical renovation in order to justify their unoriginal standard footwear.

The November (1982) Plenum of the CPSU Central Committee raised the question of increasing the independence and responsibility of the enterprises. The Masis experience is instructive as an ingenious and responsible approach to this matter.



11772
CSO: 1820/169

CONSUMER ORIENTATION EXTOLLED

Novosibirsk EKO: EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA in Russian No 7, Jul 83 (signed to press 2 June 1983) pp 41-52

/Article by G. Kh. Arutyunyan, general director of the Masis Footwear Association (Yerevan): "The Main Judge--The Consumer"/

/Text/ The improved well-being and the higher cultural level of the life of the workers are directly reflected in the work of footwear workers. For we deal not with the general consumer, but with specific people who have tastes and demands. If a machine tool or a machine, when distributed among the funds, can finally be forced upon a client even if he would rather have improved equipment, our consumers express their evaluation in the most immediate way: they simply do not buy footwear which they do not like.

Of course, by blaming objective difficulties of which there are indeed quite a few, one can bide one's time, first for one reason then for another and another, and put off more complete satisfaction of the demand. Our work, for example, is made more difficult by the poor quality of leather and chemical raw material, the insufficient diversity of accessories, the poor packaging materials and so forth. But one does not have to wait for manna from heaven, one can begin to do something oneself. This is what we did: we began with solving problems that depended on us, without removing from the agenda problems which must be raised to higher institutions and cooperating enterprises. That which can and should be done through our own efforts became the basis of the plan developed in the association for improving production. It became our reference point for future development. It seems to me that this approach coincides with the position of many participants in the discussion conducted by EKO on the problem "Enterprisingness and the Economic Mechanism" which our specialists followed with great interest.

What is the Masis association? It is 17 footwear factories and a specialized plant for manufacturing the bottoms of shoes and also a House of Fashions. We have no separate staff for administration of the association. Its functions are performed by administrative personnel of the head enterprise. The level of centralization of the administrative functions varies and depends on the production need. Norm setting, technical and economic planning, control of new technical equipment and the repair and technical service are fully centralized. At the head factory a powerful mechanical base has been created with shops for

precision smelting, the manufacture of cutters for chopping and cutting parts for all enterprises of the association, a shop for nonstandard equipment, and others. This has made it possible to considerably improve the repair and technical service for all production units.

But there are many obstacles on the path to further centralization of functions. The most serious ones are transportation and communication. The association has only one passenger car and not a single bus. This when there are 18 enterprises located in various cities and rayons of the republic! Operational control is difficult. The means of cargo transportation for serving technological and repair needs, and also for shipping raw material and products, are completely inadequate. These problems are typical of many associations, but, because of the territorial separation of its enterprises, it is even more crucial for Masis. It is impossible to group everything in one category: both those associations which include 2-3 enterprises in one city and those which consist of production units that are so distant from one another.

The association has unified autonomous financing. Only 3 of the 18 enterprises have an independent balance, including our 2 largest factories--for fashionable footwear in Yerevan and the Leninakan footwear factory, and also the experimental factory which has extensive external communications since it is always working on the new assortment. All the other enterprises function under the conditions of intraproduction autonomous financing.

The name "branch" implies something impersonal and offensive to the collective. The manager too is interested in knowing whether he is the director of a factory or the chief of a branch. The psychological effect of the title of the position is also not trivial in form ing the sense of responsibility.

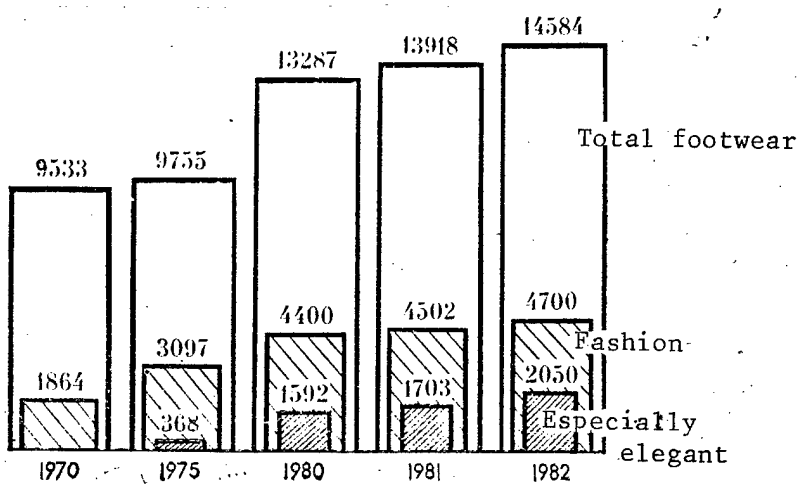
The association is carrying out object-technological specialization of production in the various shops and technological flowlines. We are not proponents ofnarrow specialization of factories in one particular kind of footwear, although, taking into account the production capabilities, a particular assortment is assigned to each of them. The name "fashion footwear factory" speaks for itself. It specializes in the production of fashionable footwear using both mechanized and manual methods. The Yerevan factory No 6, which recently went into operation, also specializes in especially elegant footwear using mechanical flowlines and manual sewing. Initially it was intended toproduce 150,000 pair of footwear a year. But because of the development of the mechanized means of production of especially elegant footwear it is increasing the output of products 4-fold. The head factory produces mainly children's footwear. At the Kirovakan footwear factory a large proportion of the products are especially elegant hand sewn footwear since the boot industry has traditionally developed in the city.

Almost all of our enterprises have shops or sections for manual sewing of footwear. The significance of these subdivisions lies not only in the fact that they produce products that are in great demand. These are our testing ground for developing the new assortment and studying the demand: we produce a small series model, we look to see how the consumers react, and then we place it on the flowline. These are also training centers: the factories prefer to train personnel themselves since the level of skill obtained after vocational and

technical schools is not high enough. The virtuoso cobblers are good mentors for youth.

Sometimes we hear the question: "But is it good that Masis enterprises duplicate each other's assortment?" We have our own point of view about this. Let us say that one factory produces only women's shoes, another--men's shoes, a third--children's footwear, and so forth. What can happen? The enterprise will become a monopoly in producing a particular kind of product, and everyone will then immediately lose. It will be necessary to purchase only those men's or women's shoes, because there will be no others. In goods that are in mass demand standardization and uniformity are very dangerous. We have several factories that produce men's shoes, but their patterns differ from one another significantly. In our opinion there should be healthy competition among enterprises in creating new items that are in demand.

Figure. Output of Improved Quality Footwear in Masis Association, Thousands of Pairs.




Another important aspect which we take into account when approaching specialization of production is economic maneuvering, and the creation of approximately equal economic conditions for all enterprises. Imagine a factory which concentrates completely in the production of the children's assortment. We immediately place it in difficult conditions since children's footwear has low profitability. Consequently, in order to satisfy the demand for it it is necessary to organize its output in a well-thought-out way. Thus at the head enterprise, which mainly produces footwear of the children's assortment, we have created flowline production of men's footwear. This was dictated not only by the concern for profit, but also by considerations of efficient utilization of raw material. Leather is saved by combining the sizes at the time of cutting. This way we made the assortment more precise at certain other factories as well.

In general children's footwear should be discussed separately. For it is far from homogeneous. "Hussar shoes" for the smallest children, boy's shoes, slippers for adolescent girls--all these are in the children's assortment. It

is known that the demand for footwear for adolescent girls is satisfied worst of all. And this is understandable. A girl wants to wear something a little more original, but at the same time she is a school girl and high heeled shoes are not for her. But the creation of elegant footwear for this group is not advantageous since the prices for it are determined by the same methods as for the entire children's assortment. Recently we received permission to establish, with the agreement of trade and the republic Ministry of Light Industry, temporary contractual prices for especially elegant girl's footwear.

Apparently we must find a cardinal economic solution regarding the output of this assortment of footwear. First of all, in our opinion, it is necessary to break down the group of children's footwear, and have a separate line in the plan for the adolescent group. Then it is necessary to think of a solution concerning contractual prices for especially elegant girl's footwear on the scale of the country. We have been forced to refuse to deliver these products to trade organizations of other republics only because the temporary contractual prices for our items are in effect only within our republic. The shortage of footwear in this group is very great. No 8th-grade girl and certainly no 5th-grade girl (now there are very many girls 11-12 years of age who wear size 36-37--acceleration!) can wear adult footwear, because they have a narrow foot. I will not even speak about the inappropriate prices.

The association is centralizing and specializing the manufacture of the bottoms of footwear. To do this it is expanding the plant that produces parts and prepared elements of the bottom of the footwear. In general we attach a great deal of significance to these parts when improving the assortment. Previously changes in fashion affected only the upper part of the footwear. Heels are manufactured centrally in the country at specialized last and heel factories. Therefore even with all the efforts of fashion designers the footwear of various factories of the country are still externally very similar. With the creation of production for forming the bottom of the shoe we acquired great maneuverability and independence, and the fashion designers acquired creative freedom. It is also very important that because of our specialized plant we managed to close small, poorly equipped shops for producing the bottoms of footwear, which appeared at our footwear enterprises because of the fact that it was impossible to expand the assortment of footwear without them. The technology in these shops was imperfect. There were cases where the sole and heel became unglued.

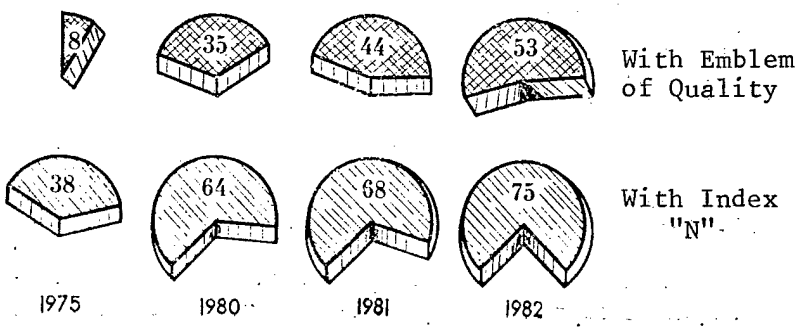
The development of centralized procurement production in the association is closely related to another organizational decision--the creation of a specialized chemical service. The utilization of kapron, polyurethane, polystyrole and other polymer materials for the bottoms of shoes and heels and the application of methods of gluing footwear and artificial materials for the upper parts forced us to concentrate special attention on the use of chemicals in production. If the problem were not singled out and designated it would be difficult to solve. Therefore a decision was made to introduce the position of deputy head engineer for chemical technology and place him in charge of the development and control of all technologies related to the utilization of synthetic materials and chemical processes.

Because of the fact that more than 85 percent of the footwear produced at Masis is glued and pitched and glue, it is very crucial for us to improve the technology of gluing. If one analyses the returns of products one notes that the main defect is the ungluing, especially of the bottom of the shoe and the heel. The chemical industry does not provide footwear workers with enough high-quality glues, and their assortment is narrow. Therefore our chemical technology service itself had to engage in research and development of glue compounds. Specialists of the association have more than 10 author's certificates of invention in this area. The work is being done in cooperation with the Kirovakan Scientific Research Institute of Polymer Glues, the Institute of Inorganic Chemistry of the Armenian SSR Academy of Sciences and the Yerevan Nairit scientific production association.

The use of chemicals in production exerts an influence on the development of waste-free and reduced-waste technologies. For example the casting of parts of the bottom of the shoe in precision patterns makes it possible to save on polyurethane and kapron which are in short supply. Because of the development of gluing compounds our specialists have managed to create very interesting models of summer footwear with cork soles. Wastes have also been put to work. All the scraps obtained when manufacturing cork soles are gathered and then, with the help of glues, they obtain a sole which is quite capable of competing with an all-cork sole.

We understand that there is still a large difference between the quality of our fashion footwear and the quality of our mass produced footwear. But both of them have the brand of Masis. The task of improving the quality of all footwear, especially mass produced, about which the consumers complain, is one of the major ones for our productions. A comprehensive system of control of product quality and systems of material incentives which have been developed in the association are directed toward solving this problem. This is discussed in greater detail in the articles written by specialists. I wish only to comment briefly on the direction of this work.

Figure. Proportion of Footwear with Emblem of Quality and Index "N" in Masis Association, %



When creating a service for quality control we discussed which subdivision to use as a base for forming it. The variant with the division of technical control (OTK) was immediately rejected. The OTK is a state service which determines the destiny of already manufactured products. The stamp of the OTK gives approval for producing the item. But quality control in all stages of the production process must be based on a subdivision which is involved with this entire process. Therefore we decided to create the division for quality control on the basis of the production and preparation services under the leadership of the deputy director for production.

In the association about 60 percent of the bonuses and progressive additional payments are intended for stimulating quality and economizing on materials.

In order to coordinate the work for improving the assortment, we organized a centralized service for fashion design headed by the deputy head engineer of the association. We have our own approach to the administration of fashion design. Fearing monotony of footwear, we form groups of fashions at almost all footwear factories, and the House of Fashoins creates the base collection of fashion, determines the future directions of the development of fashion, and renders methodological assistance to the enterprises.

An important stage in the development of the assortment is the study of the market conditions and the consumer demand. The following tasks are set for specialists engaged in these problems:

systematic observation of the condition and tendencies of the demand of the population and market conditions;

the development of proposals for forming the production program in keeping with the orders from trade;

the formulation of generalized information about the demand in the form of quarterly, semiannual and annual market surveys;

the conducting of consumer conferences, meetings, sales exhibits and reviews of new fashions in conjunctions with trade organizations;

the provision of information for the consumers about new kinds of products that are being produced and prepared for production, and the organization of advertising.

In Yerevan and other cities of the republic the association has a number of support stores in which our specialists continuously observe the movement of the supplies of footwear. When the quarter comes to an end the data from these stores are used to draw up a table to account for the footwear that has come in and been sold.

The results of the study of the demand serve as a basis for planning the assortment. The production plan that has been drawn up preliminarily and developed on the basis of trade orders is subjected to a final adjustment after the interrepublic wholesale trade fair.

The stability of the collective, as we know, depends primarily on the organization of rhythmic work, working conditions and the art of production as well as the level of wages. Of course, social and domestic conditions are of great significance. But here our capabilities, unfortunately, are less than they are when it comes to improving production conditions. We have managed to construct a dispensary, good dining rooms and certain other cultural and domestic facilities. But the housing problem is being resolved slowly. People have to wait many years for housing.

The situation with raw material has become worse recently. Before 1982 interruptions in deliveries did not cause any special violations of the rhythm of the conveyor (we maneuvered the assortment), but recently they have been happening more and more frequently. Even though the poor raw material, threads, glue and polymer material may be responsible for the poor quality of the footwear, the consumer, naturally, complains to us--the manufacturers. He does not blame and he should not blame any other. But then the suppliers of raw and processed materials should be made more responsible to the manufacturers of the product. I am in full agreement with my colleague from Novosibirsk, S. M. Zverev, who wrote about this in EKO, No 9 for 1981. It is necessary to have economic responsibility and to make the suppliers' incentives dependent on the way their raw and processed materials influence the quality of the products of the manufacturer.

The same problems exist with packaging. This is the visiting card for footwear. For high-quality footwear it is necessary to have cardboard of grades A and B. We receive almost none of it. It is necessary to use cardboard of grades C and D. Honestly, one sometimes does not wish to place beautiful shoes or boots in such a box! I liked very much what the writer I. Shtemler said about this packaging in his novel "The Department Store": "Just look at it and it will collapse." Imagine such packaging traveling on the railroad! Not only the box, but also the footwear is crushed. The leather is scratched and the heels are broken. The losses are sustained by the manufacturer of the footwear, not the manufacturer of the packaging!

Recently there have been many complaints about the fact that there has been no men's fashion footwear with ordinary heels. And, as we know, not everyone likes the higher heels. Some residents of Yerevan have written directly to our association. We have responded and created the necessary models of footwear. But it seems that the consumers do not even know about this. Trade has not provided any advertising. We made a special trip to the stores to find this out. The new models of shoes are quite unnoticeable among the other footwear. The stores of our republic do not have a shortage of footwear. The commodity mass is significant. But try to find what you need among all the shoes!

It seems to me that in the production of consumer goods it is promising to concentrate production and sales under one authority--in the industrial trade associations. There is experience in this in the socialist countries. Industrial trade associations would know the demand better and react more quickly to the desires of the consumers.

Under the 11th Five-Year Plan at Masis it is intended to increase the amount of output in physical terms at a rapid rate--28 percent. It is a difficult task since most of the increase will be provided as a result of increasing the output of footwear for which there is an increased demand. The association has drawn up a comprehensive plan for engineering support for the quality of products and the effectiveness of production. A large amount of work will be done on the basis of this for technical re-equipment, improvement of the organization of labor and technology, and the development of a progressive assortment.



11772
COS: 1820/169

CONTINUAL SEARCH FOR IMPROVEMENTS VIEWED

Novosibirsk EKO: EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA in Russian No 7, Jul 83 (signed to press 2 June 1983) pp 52-60

/Interview with K. S. Agabekyan, artistic director of the House of Fashions of the Masis Association, by Ye. Leonidova: "Retaining the 'Fire-Bird' of Recognition"/

/Text/ /Question/ Karlen Samvelovich, Masis has managed to catch the fire-bird of recognition. Women shop for shoes and sabots of the Masis firm, and men are glad to purchase Masis dress shoes. Masis products are enjoyed, Masis is up with the fashion. The influence of the fashion design service on the firm's products is unquestionable. Tell us, please, how its work is organized.

/Answer/ Fashion is a capricious, changing and intricate thing. In order to keep up with it, the innovation must be provided to the consumer today, immediately, when it is wanted, for tomorrow will be too late. This approach dictates special requirements on fashion design: the combination of ahigh artistic level of design of the items and the ability to achieve the goals in short periods of time.

Previously less attention was devoted to the fashion design service. The demand demonstrated how short-sighted this attitude was. The products of many enterprises gathered dust on the shelves and the consumers stood in line for imported footwear, which was frequently less durable and made of worse materials, but it was elegant and fashionable.

It is incorrect to regard footwear just as a necessity. It is also an object of material culture. Fashion design is close to artistic creativity and it has its own internal laws. True, it seems to me that there is also an opposite side to today's passion for fashion design services. All managers of footwear firms have flung themselves in to creating their own houses of fashions and increasing the staffs of fashion designers, forgetting that without technologists, last makers and cobblers the fashion developer can do nothing. He may create a pair of "crystal slippers" the likes of which can be found in no fairy tale or written story. But then what? They can even be given to Cinderella or placed in an exhibit for everyone to admire . . . what else can be done if the magician fashion designers do not have equally miraculous footwear workers who can produce the "crystal slippers"?

In our domestic exhibits they frequently show footwear which one could be proud to show abroad. But there are not enough of them for sale. They can be given a high evaluation by the artistic council, but on the conveyor they appear different.

Masis is also sometimes guilty of this; and it sometimes happens that series-produced footwear differs from the model, but when it comes to items in the category of fashion footwear this does not happen frequently. I think that this is because of the concern for all areas of production and development of new items. Fashion designers in the association are not above all the other workers, but work along with them. At the factories, for example, the fashion designers are assigned to the shops that are introducing the developments. And the incentives for their labor depend largely on how the schedule for the assimilation of new items is observed, and how the shop produces items with the index "N", with the Emblem of Quality, and so forth. Moreover, it is important that the fashion designers work with those who are assimilating the model and will then produce it by the thousands.

For example, we could not have assimilated the production of women's fashionable sabots with cork soles if the fitter V. V. Yepremyan had not submitted the idea fo creating the block for the cork sole by the method of gluing and had not made a machine for cutting the sole (an author's certificate was obtained for this). Incidentally, the way we obtained the cork is interesting. For about 15 years it lay in the warehouses of certain footwear factories. They were glad to give it to us since the raw material is difficult to process. V. V. Yepremyan's invention plus the development of press molds for gluing cork soles which were produced by our engineers helped us to assimilate the production of fashionable women's sabots.

In order to use complicated devices for decorating, which beautify the footwear, and in order to obtain fashionable heels and lasts, it is also necessary to have the skilled labor of many specialists. And the main thing still begins when the innovation is placed on the flowline. The technology, equipment and skills of the workers are all important when one must make sure that the tenth, hundredth and thousandth item is the same as that designed by the fashion designer.

As distinct from other republic houses of footwear fashions, ours is directly included in the association. Its main task is methodological guidance of the fashion design services of the factories and the creation of a base collection of footwear which determines the principle directions of fashion. At the same time we are developing a future and current assortment for small factories at which there is no point in creating their own fashion design services.

/Question/ How many new models are developed each year in the association and how many go into production?

/Answer/ The House of Fashions and the factory submit to the artistic council of the republic Ministry of Light Industry an average of 900-1,000 models, from which the House of Fashions creates 300. Half of them go into production and the rest remain in the portfolio. The reserve gives confidence in the work and contributes to rapid maneuvering. If a model has not been successful we immediately replace it with another one. In general we try not to keep the

especially interesting items in the portfolio too long. Traditionally, the meetings of the artistic council in the footwear associations take place in the spring, and then in the middle of the summer there are the republic and all-union trade fairs. Thus by September they have determined the assortment of footwear which the firm is to produce for the next year. But one asks why wait for next year, why not produce them today when nobody has yet suggested such fashions in the country and they have not come in through imports. We are beginning to do this. . . .

/Question/ As far as we know Masis develops and assimilates more new models than do other footwear associations with similar production staffs. How do you manage to do this?

/Answer/ Our organization of the process of fashion design is somewhat different from the generally accepted one. Usually there are fashion design artists and fashion designers. This was previously the case at Masis. But then we changed this. If one only draws new fashions while another creates the design of the model from the drawing, it turns out that he does secondary work and carries out somebody else's idea, which might not coincide with his idea about the item. Moreover, the second phase of designing is no simpler and in some ways even more complicated than the artistic drawing. Now in our association one person does the entire development, from beginning to end. The process is accelerated and the work becomes more creative and produces satisfaction.

Another peculiarity consists in that our fashion designers not only create new models, but also introduce them into production. This increases their responsibility for the assimilation of the new models. All services of the association--from the fashion designers and the technologists to the manufacturers of cutters, press forms and fittings--work on the basis of network schedules. The schedule envisions a high rate of assimilation--10-14 days--for the item.

Our fashion designer, Grant Akopovich Nazaretyan, has developed a graphic method of gradation of the parts of the upper part of the shoe in terms of sizes which makes it possible to considerably accelerate the preparation of production for new items. It is known that the fashion designer usually creates one initial new item of an average size. Then there is the process of gradation for all other sizes. With flowline production of large batches of tens and hundreds of thousands of pairs of footwear, one uses machine gradation which requires certain expenditures of labor and resources. In order to produce footwear in small series of 2,000-3,000 pair, and this is precisely the size of the batches in which especially fashionable footwear is manufactured, the graphic method is more suitable, since it is more precise for everything.

The high responsibility for meeting the schedule for the assimilation of new items is also reinforced by forms of material incentives. When the fashion designer meets the planned deadlines he receives a bonus in the amount of 10 percent of his salary, and for early assimilation this amount is increased, and for each day of delay in assimilation, the amount decreases.

Of course with such rates and requirements the fashion designers must be very skilled. When a young specialist comes to us we suggest that he work for several months in production and master all of the operations in the manufacture

of footwear: cutting and preparing the parts, hand sewing, manufacture of the heel, and conveyor sewing. If he goes through this technological chain he will be able to manufacture items of a high level with technological processing.

/Question/ High demands are placed on fashion designers. How is the problem of their payment resolved? Certain managers of footwear associations speak of the fact that the level of payment is inadequate and this makes it difficult to staff the fashion design services with personnel.

/Answer/ Indeed, so far the problem of wages for fashion designers has not been solved. Each enterprise follows its own path. The general director of the Novosibirsk Ob' leather footwear association, S. M. Zverev, wrote in EKO that he finds a partial solution to the problem through personal wage increments. We are trying to increase the role of incentives that are especially directed toward creating new models. Once a year, according to the results of the artistic council, rewards are paid for the development of models which have received a rating of 38-40 points. These indicators are used to evaluate the footwear that is produced on a level of world standards. We think that these evaluations should be given to more of the innovations created by the specialist. Otherwise there can be some doubt about creative capabilities. Why manufacture and assimilate new items in production if they do not contain any interesting solutions!

A bonus in the amount of 20 rubles is paid for each model which has been given 38-40 points at the artistic council. So once a year a fairly sizeable sum of an honorarium is received, for, as a rule, each developer has no less than 20-30 of these models. Moreover, there are current incentives for meeting the schedule for producing and assimilating new items which I already discussed and for models that are economical as compared to all-union normatives. The average amount of the bonus per month can be 50 percent of the salary.

But nonetheless the overall earnings of fashion designers are still not high since all of these additional payments are added to an initially low salary--130-140 rubles. I quite agree with S. M. Zverev that it is necessary to find a special solution to the problem of paying specialists who are involved in applied kinds of creativity and also the problem of differentiating these payments.

/Question/ In Yerevan you have a strong competitor in the Nairit footwear firm which belongs to the consumer service area. To what degree does it influence your work?

/Answer/ Yes, the ateliers and shops of the Nairit firm have many top footwear workers. Competition with them helps, so that we do not stagnate. Each firm has its own advantages. Nairit has individual prices while we have wholesale prices. We have to think more about economy. But we have the opportunity to produce fashion footwear on a flowline, by the mechanized method. If an innovation has succeeded and the consumers like the model, we have the advantage because of large series production.

/Question/ The fashion design service works both on fashionable, especially elegant footwear and on the every day assortment. To what extent do you manage to take into account the demands and tastes of various age groups of the population?

/Answer/ I understand why you asked the question. In recent years fashion has been directed toward youth: high heels and a large "platform." People have not distinguished between everyday and theater footwear, and have used the same footwear during the week and on festive holidays. Of course it is difficult to wear high-heeled shoes all the time. We must be self-critical and say frankly that we have also been seduced by the vanguard of fashion. Of course a 10 centimeter heel is not suitable for older women. Nor is it easy for younger women to walk all day long on high heels, but, of course, they would never want to depart from fashion.

Since 1983 the direction of fashion has been changing. It has accounted for various tastes. Footwear is becoming more convenient and comfortable. The heels will be 7 centimeters or less. They are convenient for the majority of women. The heels will be stronger and tailored, as we say, that is, they will not be straight throughout the entire length, but cone shaped, and they will have a "waist."

The new models reflect a desire to use not only synthetic and artificial materials to replace leather, but also less expensive natural materials: fabrics, braid and mesh for the upper part of the shoe, especially summer shoes. There will be many styles with national ornamentation and needlework. There will be a great diversity of winter and autumn shoes--from short ones to tall ones. All kinds of block soles with polyamide and kapron will be available. They are convenient and practical. Men are also waiting for the heels to become smaller. The high heels were not suitable for everyone and in general they were not suitable for older people. Beginning in 1983 on men's footwear the heels will be cut down to the usual sizes.

As for everyday footwear, the degree to which their quality differs from dressy footwear is both our fault and that of the manufacturers. Therefore we are setting the task of improving the designing of everyday footwear.



11772
CSO: 1820/160

NEW EQUIPMENT, TECHNOLOGY

Novosibirsk EKO: EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA in Russian No 7, Jul 83 (signed to press 2 June 1983) pp 60-63

/Article by R. S. Arutyunyan, head engineer of the Masis Association, and A. S. Armaganyan, deputy head engineer for new technical equipment: "New Technical Equipment--Our Ally"/

/Text/ Have you ever had occasion to observe how an experienced cobbler works? A simple hammer in the hands of an expert cobbler becomes a miraculous instrument. The cobbler uses it for more than just hammering nails. He also uses it to smooth out parts, to soften and stretch the leather, to make it thinner and to make sure that it fits the heel precisely. For finishing work he uses a hand tool which in Armenia is manufactured from light and strong wood of the cornel tree. People say here: "Footwear loves the hammer." And this is the truth.

But regardless of how idyllic the work of an expert cobbler may appear, regardless of how good his footwear may be, today and in the future footwear production will involve the mechanized flowline method.

The technological equipment created for the footwear industry makes it possible to perform many complicated operations no worse than by hand, and moreover, incomparably more quickly. Just take the pulling and lasting of the footwear on the heel. The difficulty of the work of footwear workers consists in that each pair of shoes must be placed on the heel before being sewn. An immense number of heels is necessary. But so far people have not thought of another way of forming the footwear. The pulling and lasting machines of the new generation, which have a high degree of regulation, considerably facilitate this work. They have another advantage in that they reduce the number of operations and the sets of equipment that perform them to 2 or 3.

Still the technological process of flowline production of footwear involves many operations. Suffice it to present this fact. In the wage rate and skill reference for mechanized sewing of footwear there are more than 100 occupations.

In conjunction with scientists we have analyzed the possibility of utilizing robot equipment on footwear flowlines. But the attempt to apply it was unsuccessful. It is necessary for the rhythm of the operations to coincide

precisely, for the leather to be of the ideal thickness, and for the heels not to have any deviations from the programmed sizes and forms. So far it is impossible to meet all of these conditions. Special machines give the leather a uniform thickness, but one cannot guarantee that there will not be the slightest deviations. The heels lose their form and are broken. All this has forced us to temporarily refrain from robots, but not from the idea of using robots itself. Unfortunately, one cannot but note that domestic footwear machines, and also foreign technical equipment, do not fully satisfy the needs of production. The guarantee of high quality still depends on the skills and the professional mastery of the worker, with the exception of several operations that are performed by automated machines.

Not finding sufficient assistance from machine builders, the footwear workers were forced to deal with the creation of equipment and technical means themselves. The head enterprise of the association has organized a centralized repair and mechanics base which has included the repair and mechanics shop, the electrical equipment shop, the precision casting shop, sections for manufacturing cutters for cutting and chopping parts of the bottoms and tops of shoes, and the repair and construction shop. The creation of a centralized service contributes to automation and mechanization of production.

Among the important technical decisions one should include the new design for conveyor lines with cable locomotion. They are better than the conveyors with chain locomotion which are presently used because of their high durability, simplicity of design, the lower level of production noise and convenience for servicing. At the present time the enterprises of the association are using about 70 conveyor lines with cables (their length is about 3 kilometers) and other means of transportation which they have designed themselves. They have introduced 10 sewing and leather sewing flowlines with a set of foreign equipment.

The problem of the monotony of conveyor production is extremely crucial for footwear factories. Conveyors with a free rhythm can help to solve it to a certain degree. Stress situations related to the need to perform operations within a compulsory rhythm do not appear on them. But, on the other hand, there is differentiation of output and each demonstrates his own true capabilities. The utilization of these conveyors contributes to improving product quality.

Taking these peculiarities of conveyors with free rhythm into account, the association decided to use them for mechanized flowline production of especially fashionable footwear which is produced in small batches, where it is necessary for the workers to be very skilled and there must be great flexibility and manueverability of production.

Flowline production of a complex assortment requires special attention to the decoration and finishing of the footwear--all kinds of stiches, applied parts, perforations, bows, combinations of materials and so forth. Certain finishing operations which we perform are not even envisioned in normative and technical documentation. There is really no need to state that they are poorly supplied with equipment!

Efficiency experts, inventors and production innovators play a large role in creating finishing processes and machines. The finishing of footwear by the transparency pressing method, for example, is protected. Machines have been created for cutting decorative welts made of rubber, for hot stamping of leather soles, and so forth.

Many interesting technological innovations have been suggested by machine operators and adjustors of sewing machines. They have modernized old sewing equipment, having adapted it for making braids with simultaneous sewing of decorative stitches, for creating borders and other finishing operations.

In recent years there have been disproportions in the rates of technical progress in assembly and preparation processes. In order to eliminate them the association has developed and implemented a complex of measures, particularly it has rearranged a number of preparatory flowlines so that they can provide for rhythmic operation of the conveyors and the assimilation of new models.

The level of mechanization and automation has increased from 39 percent in 1962 (the year Masis was founded) to 57 percent in 1982, including at the head enterprise where this increase is 65 percent, the Leninakan footwear factory--61 percent, and the Yerevan factory No 6 and the fashion footwear factory--70 percent.



11772
CSO: 1820/169

ON ENSURING HIGH QUALITY OUTPUT

Novosibirsk EKO: EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA in Russian No 7, Jul 83 (signed to press 2 June 1983) pp 63-73

/Article by T. V. Gorozhina, deputy head engineer for technology of the Masis Association: "The Target Approach to the Problem of Quality"/

/Text/ Our association has been actively dealing with the problem of planned product quality improvement for the past 11 years. This work began with improving the process of fashion design and technical design of footwear, and technical-technological preparation for its series production. Then we began to regulate the interrelations between suppliers of raw and processed materials and also trade organizations, and we began to study the market demand. Previously less attention was devoted to these stages of the life of the item than to production, which exerted a negative influence on the quality and assortment of the footwear that was produced as well as on its sales.

With the new approach attention has been paid to the level of technical design, the reliability and durability of the items, their aesthetic merits, their correspondence to the best foreign analogs, and the demand for the products. And previously everything amounted to determining the grade and not allowing slipshod work, that is, to control.

In order to control the quality of the products it was necessary to form a special service which would embrace all aspects of the problem. At Masis it was created not on the basis of the technical control division, but on the basis of the production preparation service--the dispatcher service, the fashion design service and the division for preparation of production, since we considered it expedient not to separate the control of production and the control of quality, and we tried to coordinate the activity of all services and production subdivisions regarding this problem since all of them affect the quality of the footwear to one degree or another. But they also solve other problems, as a result of which the work for quality can be pushed into the background. Therefore control over the time periods and the content of quality control were made operational and permanent.

In addition to this, the quality control service has been given other special functions: regulation of the quality in the stages of preparation for production, manufacture and sales, and also analysis and evaluation of the

level of the quality of products and labor, the gathering and processing of information on this problem, and investigation of the degree of satisfaction of consumer demand. It is quite natural that this complex of problems could not be solved by a service that was organized on the basis of the technical control division (OTK) whose responsibilities, rights and duties are determined by directive documents.

We also thought about the following aspect. The creation of a quality control service not only should not take responsibility for quality from other services and production subdivisions but, on the contrary, should concretize it. Therefore when the quality control division (OUK) was formed at the same time the provisions concerning all divisions and services were revised, and the duties and the system of interrelations among the divisions themselves, between them and the OUK and between them and the production subdivisions were made more precise and regulated.

When preparing for introducing the comprehensive system of product quality control (KS UKP) the association conducted a seminar for managers of services and enterprises. But before teaching we decided to clarify who should be taught what. Therefore in the first sessions everyone discussed his problems and the difficulties related to quality control. Everyone was heard, the speeches were recorded and analyzed, and only after this did we began to submit the first provisions concerning the comprehensive system of product quality control.

The KS UKP was not introduced immediately. It went through several stages in its development. The first stage was the introduction and improvement of the subsystem of defect-free manufacturing of products according to the Saratov method. Every worker is personally responsible for the quality of the operation he performs--such is its principle. To realize it it is necessary to have precise and effective control. The association developed information form reports of products, parts and semimanufactured products that were returned for corrections and from the accounts of products of the lower grades. These reports are made out by the controllers of the OTK.

But the main thing is the prevention of slipshod work and defects. Operational accounting for returned items makes it possible during the course of production to eliminate deviations from the quality level and the technical conditions. On the technological flowlines of our shops we have established signals (control lamps) from the finish controllers to the performers of the corresponding operations. The signal goes on when it is necessary to inform somebody about the appearance of defects.

The senior controller of the OTK each day submits information about second-grade products and products that are returned for elimination of defects to the accumulated supply of information which is submitted at the end of the month to the sector for economic analysis of the OUK in order to determine the amounts of sanctions and bonuses. The second copy of the information is evaluated in the shop. Thus each worker and each brigade sees both the results of its labor and their influence on his earnings.

Modern footwear production is based on flowline technology and on collective labor. A high level of technological discipline and quality are necessary in all operations. Therefore it is important for workers to be responsible to one another, especially now when the association has begun to introduce extensively the brigade forms of labor organization with payment according to the final result. We have various forms of counter-control and mutual control. Revisions have been developed for intershop complaints, as has the "Signal" form. Thus when defects are revealed during preparation and cutting, workers of the preparation and assembly conveyors inform the flowline master and the shop chief, at the same time filling out the form for intershop complaints in 2 copies. One copy is submitted to the shop that has caused the defect and the other to the sector for economic analysis of the OUK. When there are many defects on the technological flowline of the sewing shop the senior controller of the OTK, having registered the information about the returned items, simultaneously fills out the "Signal" form in 2 copies: one for the shop and the other for the OUK.

The right to use a personal sticker has so far been given to the best workers of the cutting and chopping shops who are in the initial stage of the technological process and highly skilled masters of hand sewing. In the cutting shop they have adopted mainly the brigade forms of labor organization. At the head factory, for example, there are 18 sewing flowlines. A brigade of the cutting shop is assigned to each of them. Each member of the brigade has his own number which he places on the cut piece. Therefore there is nothing impersonal. Statistics show that those who have the right to place their personal label on their work have almost no defects or slipshod work.

Before issuing a personal label and once a year during the work process, a commission headed by the chief of the OTK conducts a certification of the workers in terms of skills and instruction. The issuance of the personal label is documented by an order. The technological laboratory and the OTK periodically (usually twice a month) carry out selective inspections of the quality of parts that have a personal label. If defects are discovered the chief of the OTK determines whether or not they can continue to entrust a personal label to this worker.

Competition among workers of the cutting and chopping shops of our factories for the right to have a personal label and for the release of products without submitting them to the OTK has produced good results. Almost 650 people have won the right to release prepared items bypassing the technical control division.

At first the system of defect-free manufacture of products evaluated only the quality of the labor of workers who performed specific operations. There were no criteria for evaluating the art of production and the working position, or for evaluating the labor of engineering and technical personnel and employees, although there can be no doubt about their influence on the quality of the products. Therefore this system was transformed into a system of defect-free labor. It included methods of evaluating and stimulating the labor of engineering and technical personnel and employees, and also that of collectives of shops and factories as a whole.

When evaluating the quality of the labor of shop engineering and technical personnel in terms of the system of defect-free labor one takes into account the fulfillment of the basic planning indicators, the level of release of products with the first demand in the shops (flowline, shift), complaints from trade organizations, intershop complaints, the results of selective control inspections of semimanufactured products and prepared products, and the observance of technological conditions and the art of production. Systems of defect-free labor of factories and associations which are based on the indicators of their level operate similarly.

The second stage in the introduction of the KS UKP was the determination of organizational principles for quality control. The association and a number of factories have created divisions for quality control and certain factories have groups for the corresponding functions. The manager of the quality control division of the association is at the same time the deputy general director for production and quality. The division includes 5 sectors: for planning quality and preparing production, initial control of incoming materials and physical-mechanical tests of prepared products, technological control, standardization and market study, economic analysis and effectiveness.

At the factories it is not expedient to introduce positions of deputy directors for quality. The quality services here are under the jurisdiction of the head engineer, and in the shops those responsible for product quality are the deputy shop chiefs for quality. They have specialized councils for quality which include representatives of shop public organizations, fashion designers and the engineer of the technological laboratory. By an order of the general director an association council for quality was created. The task of the councils is to control and coordinate the work for quality. To do this they regularly hold "days of quality."

In the third stage of the basic provisions of KS UKP have been introduced into the enterprise standards, which regulate the tasks of the services, subdivisions, enterprises, directors and executives for KS UKP. They reflect the legal status of the system, the organization and conducting of the quality control system, accounting and determination of labor quality and new forms of competition for high quality production.

The introduction of a complex of state standards of the system for control of the production administration is a continuation of this work.

In light industry without high quality of items it is impossible either to fulfill the sales plan or to obtain profit or to economize on the utilization of raw materials. Therefore in the fourth stage of the development of the system the role of economic analysis increased. Research was done on the profitability of the entire assortment of footwear. On the basis of this research we determined measures for improving the profitability of the items. Now in our association all new models of footwear undergo expert evaluation in terms of economic indicators. New items are approved only after the sector for economic analysis and efficiency are given the necessary calculations.

Now, when the system has basically been arranged, we are entering the fifth stage of the functioning of the KS UKP. We are developing an automated subsystem for quality control, the ASU Masis. Its task is to gather, process and issue information on planning, accounting, analysis and prediction of the quality in all stages of the process of the creation and circulation of the item.

Practice has shown the effectiveness of the KS UKP that is in operation in the association. The level of release of products with the first demand amounts to an average of 95 percent. During the past 8 years the time periods for the assimilation of products have decreased to one-third the former level. The association does not produce products of the second quality category. Now our attention is directed toward raising the level of technology and improving the quality of mass produced footwear.

Main Functions of Subdivisions Responsible for Quality at Masis

Sector for Planning Quality and Preparing for Production

Selecting models and drawing up plan-assignments for their production.

Filling out orders for manufacturing cutters and perforators.

Exercising control over cutting equipment.

Drawing up the assignment for filling out technical documentation for the utilization of materials, methods of production and components of the flowlines and sections.

Exercising control over the operation of preparatory and assembly shops.

Testing the models prepared for startup and formulating technical conclusions.

Preparing models for approval in the artistic council and participating in trade fairs.

Exercising control over the fulfillment of the network schedule for the release of models.

Sector for Economic Analysis and Effectiveness

Collecting and analyzing information about defect-free manufacture of footwear.

Summing up the results of the fulfillment of the plan for the various grades.

Drawing up reports on quality.

Accounting for documents and complaints among divisions and shops.

Drawing up the report about the output of items in the various quality categories, with the Emblem of Quality and with the Index N.

Calculating the coefficients of quality.

Analyzing the reasons for losses from slipshd work.

Providing technical and economic substantiation of the expediency of introducing models.

Analyzing the profitability of the items.

Sector for Standardization and Studying Demand

Developing, introducing and exercising control over the observance of scientific and technical documentation in production sections.

Developing and introducing statistical methods of quality control.

Teaching controllers and other workers methods of statistical control.

Participating in the work of the certification commission.

Developing technical specifications for new kinds of items.

Communicating with the base institutes on questions of standardization and quality.

Accounting for the arrival and sales of the assortment of footwear in the stores.

Studying demand.

Processing and analyzing materials on demand and drawing up the market survey.

Accounting for information about the course of sales of the products.

The Sector for Input Control and Physical and Mechanical Testing of the Prepared Products

Exercising control over the incoming basic and auxiliary materials.

Exercising control over the physical and mechanical properties of the materials in each batch .

Exercising control of the quality of the glues and chemicals that arrive and are manufactured.

Corresponding with suppliers about quality, drawing up complaints and documents.

Analyzing complaints.

Forming a card catalog for analyzing the incoming basic and auxiliary materials and working with the suppliers.

Keeping documents from selective inspections of parts, semimanufactured products and prepared products.

Exercising control over the physical and mechanical properties of auxiliary materials.

Exercising control over the fulfillment of schedules for state inspections.

The Sector for Technological Control

Exercising control over the correctness of the determination of the grade, packaging, storage and transportation of the final product, conducting selective inspections of parts and semimanufactured products.

Checking on the condition of technological equipment.

Developing measures for improving the quality of footwear.

Participating in the rejection of products because of quality in the trade organizations.

Accounting for and analyzing complaints and products that are returned by the consumers, drawing up measures to eliminate defects.

Examining footwear returned by trade organizations and conducting repeated expert evaluations.

Exercising control over the information about defects and analyzing the reasons for the defects, and taking measures to eliminate them.

Developing instructional charts for exercising control over the final products.

Table 1. Information Communication Between Quality Control Division (OUK) and Subdivisions of Association

| Subdivisions | Information submitted to OUK | Data received from OUK |
|---|---|---|
| Production shops and sections | Results of the release of products at first demand. Complaints against related shops, divisions and services of the enterprise. Information about measures taken in reaction to complaints. Information about the return of items for correction of defects and about exceeding the limits on lower grades with an indication of the kind of defect. | Coefficients of product quality. Measures for improving quality. Figures on complaints, Information about mass defects. |

Table 1 (Continued)

| Subdivisions | Information submitted to OUK | Data received from OUK |
|---|---|---|
| Deputy director for economic problems | Analysis and economic evaluation of work of enterprise for ensuring product quality. | Information about complaints, return of products for repair (in conjunction with OTK). Organizational and technical measures directed toward improving product quality in shops and sections of enterprises. |
| Planning division | Long-range and current plans for grades, assortment and new models of items. | Actual indicators of output of items in terms of grades and models. |
| Division of labor and wages | System of incentives for workers for high-quality manufactured items. Limits for maintaining workers for product quality control in association. | Evaluation of effectiveness of incentive systems according to results of work of production shops and sections. Indicators of evaluation of quality of workers' work (coefficient of labor quality). Information about release of products at first demand, observance of limits of grades and returns for repair, and violations causing deterioration of product quality. |
| Bookkeeping | Information about losses from rejected work, complaints and fines. Sum of bonuses paid and deductions for product quality in various production shops and sections. | Information about complaints about association's products. Information about sums of deductions for poor quality of work. |

Table 1 (Continued)

| Subdivisions | Information submitted to OUK | Data received from OUK |
|---|---|---|
| Technical division and central laboratory | Proposals of a technical nature for improving quality in production sections. Proposals for revising mormative-technical documentation in order to improve production. New methods of technological processing. | Conclusions about new methods of technological processing of items, state standards and technical documentation for products. Measures for improving quality in production shops and sections. |
| Head mechanic's division | Information about the readiness of all kinds of equipment and fittings for putting new models into production. Proposals for improving the operation of technological equipment. | Information about the condition of equipment in technological sections and violations of conditions for their operation that cause deterioration of product quality. |
| Supply and sales division | Information about the provision of raw and processed materials for the assortment of products. Information about the filling of orders of trade organizations, complaints from consumers about the assortment and quality of products. Information about the arrival of materials at the warehouse. | Information about the condition of demand for products of the association. Recommendations about purchasing raw and processed materials from suppliers, taking quality of deliveries into account. |
| Personnel division | Methodological programs for training personnel (submitted for coordination) | Announcements of the need for personnel for quality control services. Proposals for training and increasing the skills of personnel. |

Table 1 (Continued)

| Subdivisions | Information submitted to OUK | Data received from OUK |
|---|---|---|
| Legal consultant | Information about the condition of complaint suits regardi ng product quality. | Documents for complaints against suppliers regarding quality of raw and processed materials. Materials from analysis of complaints from consumers. |



11772
CSO: 1820/169

SYSTEM FOR EVALUATING LABOR QUALITY DETAILED

Novosibirsk EKO: EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA in Russian No 7, Jul 83 (signed to press 2 June 1983) pp 72-78

/Article by G. A. Grigoryan, chief of the division for labor and wages, and A. Kh. Gukasyan, chief of the division for scientific organization of labor and socialist competition: "How Incentives 'Operate'"/

/Text/ The orientation toward satisfying demand has forced us to revise the system of material and moral incentives that was in effect in the association. Quality indicators were placed in the foreground since at a footwear enterprise volume indicators also essentially depend on them. The sales plan will not be fulfilled if the firm does not offer trade an interesting and varied assortment of high-quality items.

But how does one avoid wage leveling, how does one make the incentives work? People have become accustomed to receiving progressive piece-rate wages, and it is necessary for the bonus to reflect the personal contribution of each individual to the final results. Consequently, it is necessary to have a differentiated approach to determining the level of incentives.

Since the time of the introduction of the system of defect-free labor in 1973-1974, the association has created prerequesites for this approach, which is being realized as the comprehensive system for control of product quality (KS UKP) is taking shape.

The incentives for workers in basic production to perform high-quality labor is based on the following principles. The immediate worker bears complete responsibility for the quality of his work, which should be carried out completely in keeping with the requirements of technology and the shift assignment. Having discovered a defect in the work of the preceeding operation, the worker must return the semimanufactured product or part for correction. If he does not do this he will be guilty of manufacturing a poor-quality product, and the controller in the intermediate key operation or at the finish of the technological flowline, having discovered the defect, ascribes to him a return for refinishing. Thus the very system of defect-free labor gives rise to mutual control and high responsibility.

The quality of the work of the worker is evaluated on the basis of the indicator of the level of release of products with the first presentation. A product is considered to be released with the first presentation when it is accepted without reducing the grade and without returning it for correction or price reduction.

In order to have clear-cut reference points for evaluation, limits on returned items have been established in the key operations. They are based on the statistics for returned items over an extended period. The returned items should not exceed 0.6 percent of the overall quantity of products that are inspected. Then the bonus is paid in the complete amount--25 percent of the piece-rate earnings. If the amount of returned items is less than 0.6 percent, the amount of the bonus is increased.

In addition to the monthly (current) bonuses from the wage fund, the workers receive bonuses from the material incentive fund for producing footwear with the Emblem of Quality (once a year) and the index N (each quarter), for the art of production and for prize-winning positions in the socialist competition. The bonuses for quality comprise up to 60 percent of all the bonus payments.

Incentives for the labor of workers who are not direct manufacturers of products (adjusters, repair workers, transportation workers and other auxiliary workers) are made dependent on the fulfillment of the production plan in physical terms and in terms of the grades of the footwear of the shops which they serve. Coefficients of labor quality have been introduced for this category of workers.

One must say that the evaluation of labor in terms of service for production does not always correspond to the quality of the labor itself. Judging from the press, we have still not created sufficiently clear-cut and good methodological developments. This problem becomes especially critical with the complete changeover to brigade methods. It is necessary to find methods of measurement and evaluation of the labor of the collective who are employed in servicing main production so that they, like the workers in the main production, are motivated to achieve high final volume and quality indicators.

The evaluation of the labor of engineering and technical personnel and employees is also done on the basis of a general coefficient of labor quality. It is determined taking the following criteria into account: fulfillment and overfulfillment of the plan for the output of products of the first grade and with the Emblem of Quality, the lack of instances where footwear is changed over to the second grade or returned for repair, the lack of complaints and fines, the worker's fulfillment of his functions and assignments for providing for high-quality products, the condition of technological and labor discipline, the fulfillment of planned measures for improving product quality and advancing the art of production.

When individual indicators are not fulfilled the coefficient of labor quality is reduced, and with successful fulfillment it is increased (see Tables 1 and 2).

Table 1. Indicators that Increase the Coefficient of Labor Quality

| Indicator | Criterion of evaluation | Points |
|---|---|---|
| Overfulfillment of plan for output of footwear: | | |
| Grade I | For every 0.1% of overfulfillment | +0.004 |
| Highest quality category | For every 1% of overfulfillment | +0.01 |
| Early and high-quality fulfillment: | | |
| Measures for improving product quality | For each measure carried out with a 25% reduction of the established time | +0.05 |
| Assignments of enterprise management | For each assignment | +0.05 |
| Awarding of class positions in competitions and reviews of the scales: | | |
| All-union | For each case | +0.2 |
| Republic | For each case | +0.1 |
| Factory | For each case | +0.05 |

Of course point evaluations are not completely free of subjectivism, but they make it possible to evaluate quantitatively the quality of labor of the workers and entire collectives. And, finally, if the evaluations contain only indicators that directly influence quality, they are perfunctory and vague. For example we include in labor quality the participation in public work, training in higher and secondary training institutions, participation in sports and cultural measures, and so forth. Therefore point evaluations in our association exert a sufficiently stimulating influence.

In the press (including in EKO) they have repeatedly raised the question of how to strengthen the technical control service, and how to attract skilled workers to the positions of controllers. The director of the Kupavinskiy fine cloth factory, V. Ye. Yerofeyev, wrote that this is impeded by the poor wages of

specialists in the technical control service.* Therefore incentives for the labor of controllers and their increased responsibility was a subject of special concern in the association. The provisions developed for them concerning bonuses contain indicators for lowering and raising incentives which are differentiated taking into account the specific nature of their work: return of products for repair according to data of the selective control inspections, return and reduction of grade, complaints, unsatisfactory accounting, careless documentation of defect information, intershop complaints, tardy or perfunctory response to complaints of consumers, and so forth.

Table 2. Indicators that Reduce the Coefficient of Labor Quality

| Indicator | Criterion of evaluation | Points |
|---|---|---|
| Lack of correspondence of footwear produced on flowline to approved models | For each case | -0.1 |
| Reduction of grade and return of footwear because of complaints caused by shop (assembly shops) | 0.1% of output of given kind of footwear | -0.01 |
| Return of footwear from consumers (assembly shops) | For every pair of footwear | -0.02 |
| Failure to carry out earmarked measures for quality within established time periods. | For every case | -0.2 |
| Violation of technological discipline | For every case | -0.05 |
| Violation of work rhythm caused by shop | For every case | -0.01 |
| Evaluation of neatness: | | |
| Satisfactory | For every case | -0.1 |
| Unsatisfactory | For every case | -0.4 |
| Existence of complaints about quality from consumer shops | For every case | -0.05 |
| Lack of models for finish controllers | For every case | -0.1 |
| Incorrect accounting for return of semimanufactured products and prepared footwear for repair | For every case | -0.5 |

*EKO, 1978, No 4.

In order for OTK workers to obtain the maximum amount of the bonus--40 percent of the wage rate--a mandatory condition is the lack of complaints and return of footwear from trade organizations. And if there have been complaints, the amount of the bonus is reduced on a scale: with a volume of returns of up to 0.6 percent the bonus is reduced by 50 percent, and up to 1 percent--it is not paid at all.

Among the quality indicators a special place is held by the output of footwear with the index N. We have drawn up provisions concerning awarding bonuses so that the bonus primarily motivates the immediate creators of new fashions and models. The distribution of the bonuses is differentiated. The maximum percentages received by those who participate directly in the creation of footwear with the index N, the second category includes those who indirectly influence its output--their bonus is 10 percent less, and the third category is service personnel. Their bonus is 20 percent less.

Socialist competition plays a large role in stimulating high-quality output. The association has the following kinds of competition:

between flowlines and brigades,

between basic and auxiliary shops,

between factories which are divided into 2 groups for providing comparability of indicators and working conditions.

According to the conditions of the competition the largest number of points are given for fulfillment of assignments for producing products of grade I, footwear with the index N and with the state Emblem of Quality, and for reducing the number of complaints and footwear that is returned by trade enterprises (for sewing shops) and reduction of intershop returns.

Collective forms of labor organization have become widespread in the association in recent years. On the conveyor flowlines the brigades are organized according to the principle of "brigade--flowline," and in flowlines with a free rhythm--the brigades on the flowlines and in the shops for small series when manufacturing footwear by hand they are organized into microbrigades with a complete technological cycle.

In order to coordinate the work of the shops, a need has arisen to create overlapping brigades from units of related shops. Competition has been developing for the title of overlapping brigades with excellent quality. The teams of the related comprehensive brigades conclude an agreement among themselves whereby they commit themselves to ensuring the best final result--a high-quality item.

Another peculiarity of the organization of competition in the association is that the amount of money from the material incentive fund for motivating the winners has been increased to 12 percent. Previously it amounted to 6-8 percent of the material incentive fund and was almost not appreciable in the overall volume of bonus payments.

The results of the competition also affect the bonuses of workers and production collectives in terms of the results of production activity. For the winners who have held high places in the competition for several years in a row the amount of the quarterly bonus is increased by 30-50 percent, and the remuneration for the results of the work for the year (the 13th wage) is increased by 10-15 percent (see Table 3). All this contributes to increasing the effectiveness of competition.

Table 3. Evaluations Used at Masis for Fulfillment of Socialist Commitments by Flowlines, Brigades and Sections

| | |
|---|---|
| 1. Fulfillment of commitments in terms of physical indcators (number of pair of footwear produced) | |
| For fulfillment of commitments by 100% | +5 |
| For each percentage point of overfulfillment | +1 |
| 2. Fulfillment of commitments for product quality | |
| For fulfillment | +10 |
| For each 0.1% of overfulfillment | +1 |
| 3. For economizing on materials and semimanufactured products | |
| For fulfillment of commitments | +5 |
| For each 0.1% of overfulfillment | +1 |
| With overexpenditure of raw material the brigade is excluded from the competition | |
| 4. Complaints, intershop returns and fines of trade organizations | |
| Without them | +15 |
| With returns and fines for every 0.01% of output | -2 |
| When complaints exceed 0.1% of the overall product output, the flowline (brigade) is excluded from the competition | |
| 5. Labor productivity | |
| For fulfillment of commitments | +5 |
| For each percentage point of overfulfillment | +1 |

Note. In addition to the indicators given above, when evaluating the fulfillment of commitments they also take into account the output of product with the State Emblem of Quality and the index N, the condition of labor discipline, technical safety, the observance of production culture, neatness and order at the working positions.

The material incentives are combined with moral ones. The winners of the socialist competition for high product quality are given certificates of honor and diplomas awarding them the title "Enterprise (shop, flowline, section, brigade) of excellent quality," they are given high positions in socialist competition for improving product quality, the Challenge Red Banner, and so forth. Workers are awarded badges of honor, certificates and diplomas and they are given the titles "Best Worker of the Occupation," "Outstanding Worker for

Quality," "Master--Golden Hands," "Master of the Highest Class," "Best Controller of the OTK" and others. Entries are also made in the Book of Honor, the Book of Labor Glory, the bulletin board of honor, and so forth.

Work for improving methods of material incentives and organizing socialist competition for high product quality is continuing. The Ukrainian Scientifc Research and Design-Technological Institute of the Footwear Industry is rendering a great deal of assistance in its organization.



11772
CSO: 1820/169

MOSCOW 'GUM' REPRESENTATIVE EVALUATES ASSOCIATION'S MERCHANDISE

Novosibirsk EKO: EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA in Russian No 7, Jul 83 (signed to press 2 June 1983) pp 79-81

/Article by L. S. Kononova, senior merchant of the footwear department of GUM (Moscow): "What the Moscow 'GUM' Thinks About Masis"/

/Text/ I have been working with Armobuv'torg on procurements of footwear for GUM for 6 years. The volume of deliveries of footwear from the Masis association is fairly stable--at the level of 2.7-3 million rubles a year. We receive more from the Moscow factories: 9-9.5 million rubles more from the Parizhskaya kommuna, and 5.5 million rubles more from Burevestnik. But in the interrepublic wholesale trade fair we purchase more products from Masis than from associations in other cities and republics. In 1983 this association will deliver 1 million rubles' worth of additional products for our branch, the Molodezhnyy store, which will open up on Mozhayskoye highway. It seems to us that Masis has captured the youthful style of footwear better than others.

What in particular does trade find valuable in a production partner in general and in Masis? Above all, of course, a good assortment and high quality of footwear. But interest in achieving the common goal--satisfaction of the demand--cannot be dismissed either. It is difficult to work with an indifferent partner who thinks that his mission ends with the delivery of products under the agreement and the rest of it has nothing to do with him. He does not want to know about the movement of his items and does not want to hear any counter-suggestions.

Masis is an interested partner which follows the trade market and reacts to it. The association takes into account both the demand of the consumers and the innovations in world fashion. Therefore in terms of new models it is frequently ahead of even foreign deliveries. Its assortment includes no standard models or monotony. Masis workers change the models themselves as soon as they see that the demand is dropping. This is important for the production of consumer goods. Unfortunately it is frequently the opposite. Trade gives the signal and insists on replacement, but the enterprise, referring to the contract for deliveries, continues to put out the same kind of footwear.

Its level of fashion design gives Masis the advantage over other footwear enterprises. In 1982 the greatest demand was for women's sabots with natural cork. Women's summer shoes with a thin high heel and a sole made of polyamide, as well as home and textile footwear sold well. There was a large demand for men's fashion footwear with a higher heel and with a sole made of polyurethane.

The association reacts quickly to remarks from trade. Here is an example. In the first batch of the new model of summer women's shoes the strap turned out to be a little short. We called Yerevan to the fashion footwear factory and the next batch already had normal straps.

Each quarter we give the footwear enterprises information about the demand for their products, what has sold the worst, and what remarks were made about quality. Masis frequently discusses our information at the association's council of directors. Thus in May 1982 they announced to us from Yerevan that our market survey for the first quarter was discussed and the parties guilty of the noted violations were harshly punished. What were they speaking about? We notified the Masis workers that there was a demand for men's high-topped shoes, women's house shoes with an upper part made of electrostatic suede and sabots, but some quite high-quality products had to be returned because of the unclear marking of the price and the grade of merchandise. Indeed, this remark was subsequently taken into account.

Many footwear workers do not attach the same significance to marking as trade workers do. For us it is no less important than quality. Why give the consumers any doubts about the correctness of the price? The work with price lists and marking is an important job and I should like to draw the attention of footwear workers to it. At GUM we have a special service of merchants for prices. Their duties include strict control over the correctness of prices and the marking of goods. Thus incorrectly or unclearly marked footwear does not go onto the sales floor and there are no loopholes for dishonorable intentions. But still it is necessary for the supplier enterprises to check on the precision of the marking. Then there will be no more additional concerns either for industrial workers or for trade.

I cannot but note that Masis has poor packaging for footwear. It is understandable that much of this is not their fault: they receive poor cardboard. But they also have great difficulties with leather raw materials. Local leather plants deliver poor-quality raw material. But in the majority of cases the Masis workers overcome these difficulties. It seems to me that they have reconciled themselves to poor packaging, thinking that this is not the main thing.

The footwear division of GUM has concluded an agreement for socialist competition with two Masis factories. These are the fashion footwear factories No 10 and No 6 of Yerevan. Contacts with them are the closest. We inform one another about the course of the fulfillment of commitments and about the course of the production and sales of all kinds of fashions. I think that these contacts should be expanded. They will contribute to improving the work of both parties.



11772
CSO: 1820/169

ASSOCIATION WORTHY OF EMULATION

Novosibirsk EKO: EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA in Russian No 7, Jul 83 (signed to press 2 June 1983) pp 81-92

/Article by Ye. Lysaya: "From the Association of Cobblers"/

/Text/ "You Deserve the Title of Master "

For many centuries some of the most respected and strongest craftsmen's unions of Armenia were the socieites (Amkarstvo) of cobblers. Their footwear was reknowned for its quality, lightness and elegance. From written sources of the 12th-14th centuries, from regulations and from official documents of Amkarstvos of Armenian shoemakers one can see the high requirements that were placed on the members of these craftmen's unions.

"When being accepted for membership in the Amkarstvo the head of the shop gave the person being initiated into the rank of master (Varpet) the order 'to live honorably and to apply his trade without deciet.' The Varpet who violated these principles was stripped of his title. The code of laws of the 12th century envision for stealing any material a fine of 'four to one.' It was a widespread custom for the Varpet to be obligated to make a solemn vow in the presence of the head of the shop to pass his mastery on to his student, to teach him all of the fine points of the trade.

"The day of initiation into the profession was festive. At a general meeting of the Amkarstvo the master presented his apprenctice, gave evidence of his skill and demonstrated his work. An official document was read to the initiate: 'You have demonstrated in the presence of all the masters gathered here that your knowledge merits the title of master, bear this title and we congratulate you' (from official shop documents drawn up in 1875)."

A group of sculptures entitled "Cobblers" has been installed on a small square on the territory of the head factory of the Masis firm. The old cobbler is teaching his apprentice. The apprentice, paying attention to the instructions, does not remove his gaze from the face of the teacher, which shines with intelligence, perspicacity and goodness. Some think that the master-mentor somewhat resembles the Masis general director, Grant Khachaturovich Arutyunyan. And perhaps in fact the sculptor, who had spoken a lot with the director and been impressed by his fervent belief in the importance of the traditions of national craftsmanship and his love for the profession, gave the image of the old cobbler some of his features.

"If a person says: 'I am from Masis' with the same pride as one says 'I am from Armelektrosvet' or another prestigeous enterprise, one can be confident that he will not produce poor footwear,"--G. Kh. Arutyunyan repeats these words frequently, and they reflect his director's credo.

It was with the increased prestige of footwear production that he began his activity in the role of first manager of the association. The situation looked paradoxical. In a republic where the footwear craft was a traditional national industry, it was as though it was necessary to increase the authority of the footwear industry again! The fact is that the Armenian cobblers, although they have continued to be reknowned for their mastery, for many years have not exerted an influence on mass footwear production. The masters of the extra class did not go to the factories, preferring handicraft industry, in spite of the fact that it was increasingly difficult to make a living. In order to sew elegant shoes they had to use fair means or foul to get good leather goods, to purchase them from speculators and to pay three times their value. Certain of them changed their occupation. It was not only concern for earnings that caused them to do this. For them it was quite unacceptable to work on a conveyor with impersonal ordinary mass-produced footwear. Each had his own style and creative inclinations. Many were reknowned for their mastery throughout the entire republic. Satisfaction with good work was no less important for them than earnings.

Even those highly skilled cobblers who remained at the enterprise saw in their work only the possibility not to lose their labor tenure, that is, to be involved in work and have a labor book. Sitting out his time on the flowline performing the simplist operation on equally simple footware, the Varpet hurried home, to his bench, which brought him the joyful feeling of creativity. Here he was inspired to create beautiful footwear.

Labor turnover at enterprises of the association was immense. The people who came here were mainly stragglers who for various reasons were unable to find work in machine building, electronics or other prestigious productions, and also school graduates who did not care where they earned labor tenure in order to enter an institute. They did not intend to become footwear workers.

An inspection conducted by the USSR People's Control Committee in 1972 summed up the characteristics of this period: the quality of the footwear was poor, warehouses were filled with products which could not be sold, and there were immense losses on the books . . .

The situation was difficult in the footwear industry during those years not only in Armenia, but also in other regions of the country. It was more critical in the republic because it pointed up the contrast between factory production and the excellent footwear which could be acquired from craftsmen and in consumer service shops and Ateliers. But the path to advancing footwear production was sketched more clearly here: combining the possibilities of mechanized production with the experience and mastery of skilled cobblers. The entire question was one of attracting them to the footwear industry. Today everything is different.

". . . At Yerevan factory No 6 there is a waiting list for training of footwear workers. The youth go to work in other services of the factory in order to wait until one of the Varpet teachers is free." (From stories of the association's specialists).

". . . When I come to Masis I love to visit the factor for fashion footwear No 10. People there are incredibly devoted to their occupation. In the hand sewing sections they create works of art, real treasures! They could show people something! They could provide shoes for Alla Pugacheva or some other popular actor!" (From a conversation with the deputy chief of the administration for development of the leather and footwear industry of the USSR Ministry of Light Industry, Ye. B. Bykhovskiy.

This is the way it is today. Now, 10 or 11 years later, there are few who remember how all this began and how difficult it was to set things in motion. At that time Arutyunyan disappeared somewhere for hours. "He was speaking with footwear craftsmen," visitors were informed. Indeed, he did not begrudge time for meetings with experienced Varpets. Sometimes he would go to one of them, look at the shoes that had been manufactured for sale, praise them, sympathize about how difficult it was to obtain raw material, that it was necessary to work year around without a vacation, and then he would suggest: "Come to the factory, Varpet, and I will guarantee you that your net earnings will not decrease. You will not pay the taxes which you now have to pay as a craftsman. We will provide good raw material and it will no longer be necessary to search and scrape for it. You will receive all the benefits that a state industrial enterprise provides--pension security, paid vacations for recreation and illness, passes to health resorts, your honor and respect will not decrease. You will work as you do now: we will create sections for hand sewing of especially elegant footwear. And tell your comrades that Masis invites the best cobblers. And if you know of any who have left footwear work and gone to other plants, give me their addresses, I wish to speak with them."

Certain close assistants of the general director and managers of the experimental factory and the factory for fashion footwear No 10 became "voluntary pathfinders."

Now all this is past. Everyone has forgotten how cautiously the Varpets responded to the summons, how they brought things to a halt by their demands on the quality of materials and heels. And the red tape involved in price setting was also finally unraveled. True, prices are always a center of contradictions. But now there are methods of establishing wholesale prices for especially fashionable footwear, whose production has already acquired a particular legal status. And previously it was necessary to establish individual prices and each time prove the need for compensations for increased expenditures. Everything was finally proved by the consumers themselves: inexpensive conveyor footwear remained on the shelves and that which was sewn by th e hand of a master was immediately sold out.

The changeover from manual sewing of elegant footwear to mechanical sewing is an incomparably more complicated stage. Yes, today the association has a high level of fashion design, new equipment and better technological processes. But

still there is the problem that the color of the model is not retained in the hundredth or thousandth pair that come from the technological flowline. With piece-by-piece manual sewing these problems did not exist.

In the Masis mail are orders from the largest trade firms of the country and from the association of Berezka stores which sell goods for foreign currency. But this same mail sometimes brings unpleasant news and complaint documents. And again it is a matter of the people, their skills and their mastery . . .

"Just look at how many cars have appeared near the doorway at the end of the shift," the head engineer of fashion footwear factory No 10 draws my attention to this. Loving fathers have come for their offspring even though many families live in the neighboring microrayon and it takes 10 minutes to walk--nothing but a pleasure. It is hardly just earnings that can motivate such a son or daughter. Rather, it isinteresting work and the prestige of the enterprise. The best masters of manual sewing have been assigned to mechanized flowlines. When a new model is assimilated their authoritative word is frequently more important to the young worker than the instructions of their immediate superior.

We have managed to arouse interest in the occupation, and youth have gone to the institutes and tekhnikums of light industry. If you want to study in the day school you can work on the second shift. We have formed an entire flowline for this. If you want to obtain an evening education we guarantee only the first shift. We are building a sports hall--let the youth train and defend the factory honor in sports. We have opened stores for semimanufactured products and agricultural products--let it be convenient for workers who are also housekeepers! It is necessary to struggle for personnel.

To Know and To Be Able

The young technologist Oganes Akopyan who familiarized me with the production at the Kirovakan footwear factory told a story which seemed extremely remarkable:

"When I came to the factory after the tekhnikum at first I was afraid to go into the shops. I spoke to people and I knew that they might answer me: 'If you know everything so well show us yourself how this work should be done!' I understood that if I did not learn how to sew footwear I would have no authority among the workers. I sat down next to an experienced cobbler, repeated what he did and day-by-day mastered the technique of manual sewing. These shoes which I am wearing I sewed myself. Here at the factory almost all the managers and specialists have mastered the cobbler's trade."

Subsequently I became convinced that this is the case not only at the Kirovakan factory.

Suren Setrakyan sewed his first pair of shoes when he was 17. He worked for 10 years on the conveyor and in the hand sewing section. He completed the Yerevan Polytechnical Institute by correspondence. He was advanced to the position of a master. When he had mastered his new role he was told: "Suren, even though you are a good cobbler this does not mean that you are a good

footwear maker. It is necessary to study technology." They suggested that he go to Moscow, to the Institute of Light Industry. He hesitated because he did not know the Russian language well. But still he decided to go. He completed training successfully and mastered the language. Now Suren Andronikovich is in charge of the OTK.

The director of factory No 6, B. A. Goroyan, is also an excellent cobbler. And the general director of Masis can also sew footwear himself. It goes without saying that every fashion designer must be able to produce the model he has developed and turn the heels.

. . . There was a production conference and current affairs were being discussed. And suddenly an unexpected question from the general director: "Incidentally, have you devoted attention to the fact that there was an article in the magazine, KOZHEVENNO-OBUVNAYA PROMYSHLENNOST' regarding the problem we are discussing? Who has read it?" Another time he referred to an economic journal that had come into the technical library. And when touring the shops, Grant Khachaturovich can speak with line foremen about innovations in special literature. Very discriminantly and delicately he has introduced to reading even those who have not looked into it.

Certain footwear workers perceive the combination of knowledge and practical ability among specialists and managers of Masis only as professional traditions, not seeing here a very unique administrative experiment: a noncompulsory, but persistent development of the principle "to know and to be able." This principle is not new, but, unfortunately, it is frequently forgotten. There are still so many pure "theoreticians" among technologists and designers of the sewing, footwear and knitting industry and among planners--in places where, in our opinion, they are simply counterindicated! In one very respected footwear association they complain to me about the fact that there was nobody to create the first models of new footwear. Another time I had occasion to be witness when an engineer-planner was at a metallurgical plant and was interested in becoming familiar with a station for producing gas whose design she had developed. Before this she had never seen these stations in real life . . .

In Japan not a single specialist in electronics will be allowed to create a device for numerical program control for metal processing machine tools if he has not worked for at least a half year in the shop where these devices are manufactured. The designers of many European footwear enterprises also begin from the working position and only a couple months later do they obtain the right to participate in the competition (!) for independent creation of designs.

The Masis experience in this area is no less rich and it deserves study. The approach to competence taken here contributes a great deal to raising the level of the footwear business.

Competence and Responsiblity

In the summer of 1982 in the council of directors of the association the manager of one of the factories was called to account for the culture of production.

Before this the quality control division of the association had three times given the enterprise an unsatisfactory rating for the condition of production culture in the shops. The managers and head specialists of the factory were deprived of their bonuses since the evaluation of the culture of production is one of the indicators that influences their incentives. But nonetheless everything remained as it was. The director believed in his innocence, assuming that as long as the plan is fulfilled and the products are in demand he would be allowed minor errors, among which he included the culture of production.

And this factory could keep up with the plan for a certain amount of time, but the youth were already less willing to go there. And there were special difficulties with specialist personnel. Graduates of VUZes and tekhnikums who were assigned there were immediately struck with the contrast between the factory and other Masis enterprises. There they had attractive interiors, many flowers, floors painted in bright and light tones, on which a scrap of fabric or leather was immediately noticed, excellent ventilation and white robes for the workers on the flowline. Here there was a persistent smell of leather and chemical reagents, boring impersonal premises, greay black concrete floors, dirty aprons . . .

The general director never intervened in the instructions of his subordinates even at the level of the managers of services, not to mention the directors of enterprises. If they made an incorrect decision he would try to abolish it and replace it with one he had made himself. But he never made remarks in the presence of his subordinates and would always find an opportunity to make this decision alone. But there was a case when neither the remarks nor the decisions of the division of quality control brought the director of the factory to the overall position of the association regarding the culture of production, which Arutyunyan formulated in this way: "Not a dark apron, but a white robe should be the special clothing on the flowlines." It became necessary to discuss this at a council of the directors.

Previously in the reception room of the general director and the head engineer of the firm there was always a crowd of people. Now the only ones who come there are those who have an appointment, who are to participate in a conference. No, the managers have not separated themselves from the collective. It is simply that they have begun to resolve more problems independently on the spot. If a shop chief comes to the general director with a question about technology, bypassing the laboratory headed by the deputy head engineer for technology, or if the director of the factory questions the wage fund without visiting the division for organization of labor and wages, Grant Khachaturovich will not listen to the visitor. He thinks:

"Let them at least try to study the situation that has arisen and find a common point of view, let an incorrect decision be made, but let there be some decision! Sometimes people have become accustomed to immediately placing all their problems on the shoulders of the head managers. This gives rise to dependence, irresponsibility and incompetence."

Is it more difficult or easier to work with this arrangement of things? Here is how this is regarded by the head engineer who has the same last name as the director, Rudol'f Surenovich Arutyunyan:

"When Grant Khachaturovich was appointed general director, everyone was given the right to work independently. The former director took everything on himself. He caused his subordinates to lose the ability of making decisions themselves . . ."

The manager of the group for demand, the young engineer Nerses Varosyan, also thinks that independence mostly gives rise to creativity, and to increased responsibility and competence.

They know Varosyan in all of the footwear stores of Yerevan. If he does not show up for a long time the trade workers call him: "Nerses, where have you been? We have news." They call, of course, most frequently when not everything is well. They call when the footwear is not selling or when there is no demand for the assortment. He cannot always help with the delivery of a new batch of marketable footwear, but he does everything he can.

The service at Masis for studying demand still has few people, incidentally, as is the case in many footwear associations. The study of the demand is less well financed than other areas of the development of enterprises. It is assumed that the traditional forms are quite adequate--local questionnaires, market surveys, consumers' conferences. Varosyan does not agree with this.

"Questionnaires do not produce very much," asserts Nerses, "the paper constrains one person so much that he cannot write two words, another begins to fantasize when he puts the pen in his hand, and a third makes do with some kind of trivia. One joker wrote: 'I do not need footwear, I am looking for a suitcase . . .' But if the person conducting a questionnaire has a microphone in his hand, the consumer will answer the questions one way or another, and one can gain more from the responses and obtain a more representative selection of consumer opinion. It would not hurt for the specialist in demand study to have a camera as well--then he would be operating not with paper documents of complaints, but with photographic documents. And even a movie camera would not be out of place. The ministry made two films about Masis for us. It seems to me that we ourselves should have made these films, and not films for show, but working films which help to study the demand."

Attraction and enthusiasm are stimulated by encouraging independence and by the trusting approach that is inherent in today's style of administration of Masis.

The machine operator of footwear factory No 6, Georgiy Simonyan, devoted three and a half years to the machine for weaving mesh. He began to work on it when the cornerstone of the factory's production facility was laid, and he completed it when the building was finished. Mesh made of kapron with this machine turns out to be an elegant openwork which harmonizes well with the light cork sole. It is the basis for the design of summer footwear, of which there is a great shortage even in Yerevan, in spite of the fact that it is produced on mechanized flowlines. Specialists of the House of Fashions have traveled to many machine building plants of Yerevan in search of metal scraps for accessories and finishing of footwork: footwear workers are given very meager supplies of metal. Boots and shoes with the brass "snake" on the heel are an object of

special envy of fashion lovers. And hardly anyone would think that this metal was found in boxes for wastes.

The deputy head engineer for new technical equipment, Arshaluys Serapionovich Armaganyan, has for many years been deeply involved in gathering material on the history of footwear production in Armenia. The director of the Institute of Ethnography of the Armenian SSR Academy of Sciences, academician, B. I. Arakelyan became interested in this work. He assigned an experimental scientific consultant to the engineer and helped to obtain the necessary documents from museums and archives. The book "Footwear of Ancient Armenia" was published in 1978. A new work by Arshaluys Serapionovich devoted to footwear production in the republic is being prepared for publication.

The chief of the footwear division of the USSR Ministry of Light Industry, Lyudmila Vasil'yevna L'vova, notes the involvement of Masis workers in their work:

"They come to Moscow and their first job is to find out if there are any interesting exhibits, if new catalogs or models of footwear from foreign firms have come out, and what is new in the House of Fashions or the Moscow factories. And they try to visit everywhere. A couple of days ago the head engineer of Masis, Rudol'f Surenovich Arutyunyan, flew in from Yerevan. He called directly from the airport to find out the exact time of the conference, and when he heard from me that a footwear exhibit for light industry was opening up in Sokol'niki, he immediately went there."

The highest percentage of footwear with the Emblem of Quality and medals from international exhibits for original fashions go to Masis. But workers of the All-Union Institute of the Assortment in Light Industry also make remarks to the effect that the association's artistic council gives certain new fashions more points than they deserve--this also includes Masis. The long line in the GUM for Masis sandals and the dispute between the OTK controllers and the brigade from one of the flowlines about materials with incorrect shades of colors--is also from the life of Masis . . .

Masis translated from Armenian means the top. It is a difficult ascent. There are many obstacles along the way and there are difficult areas. But after an obstacle, new heights are gained . . .

The path continues.

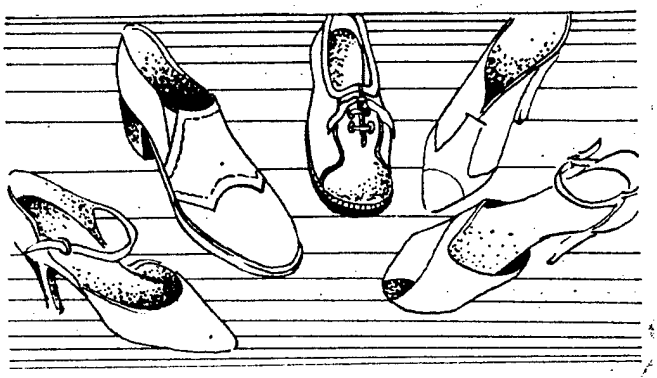


11772
CSO: 1820/169

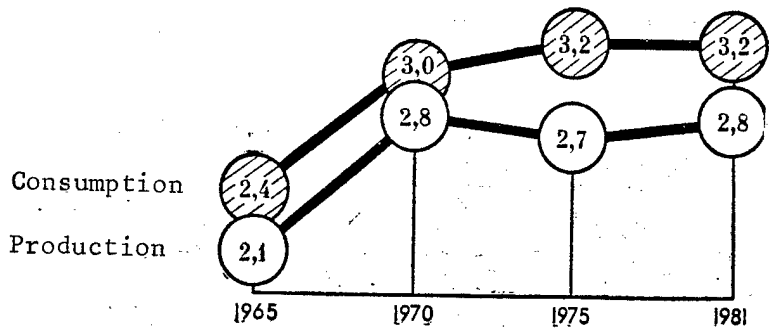
CHARTS COMPARE SOVIET, SELECTED FOREIGN FOOTWEAR PRODUCTION

Novosibirsk EKO: EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA in Russian No 7, Jul 83 (signed to press 2 June 1983) pp 93-98

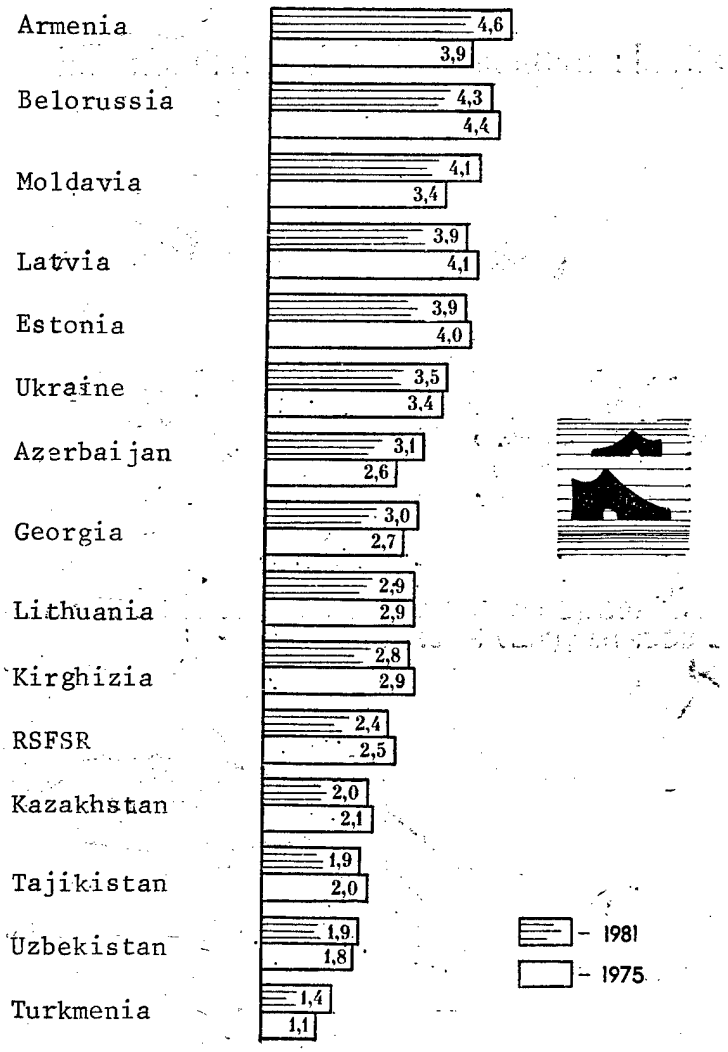
Footwear: Production and Consumption



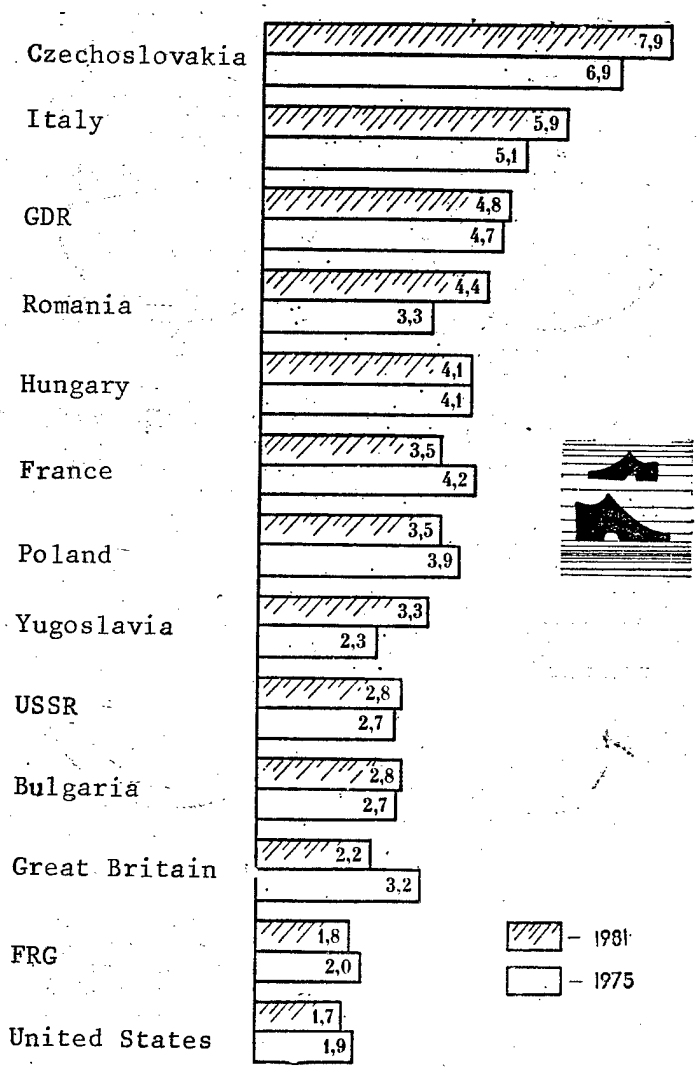
Per Capita Production and Consumption of Leather Footwear, Pairs



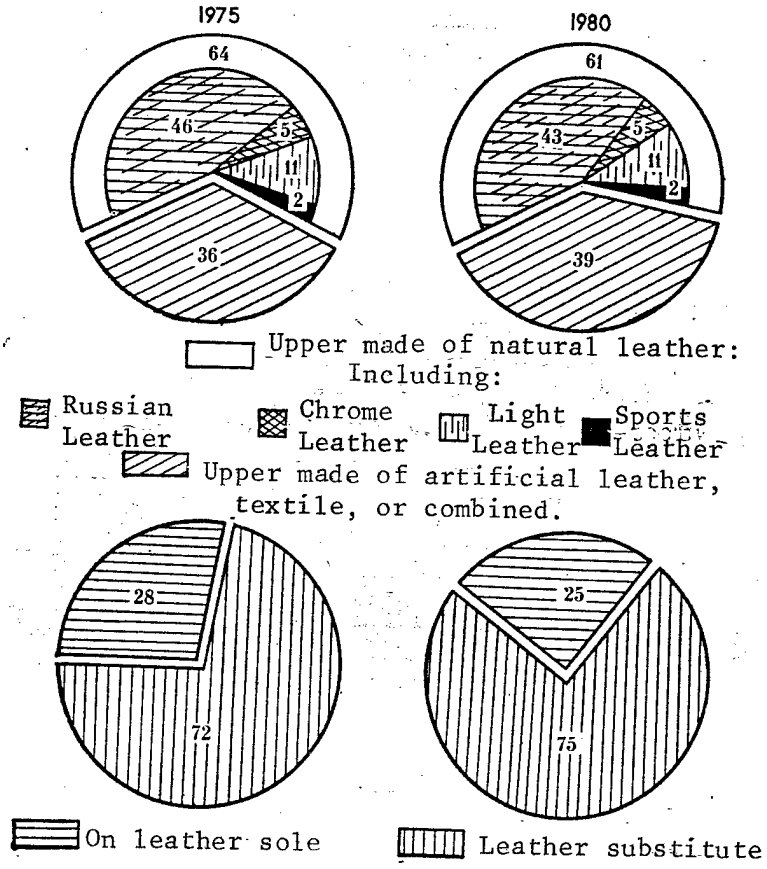
Per Capita Production of Leather Footwear in Union Republics, Pair



Per Capita Production of Leather Footwear in Certain Countries, Pair

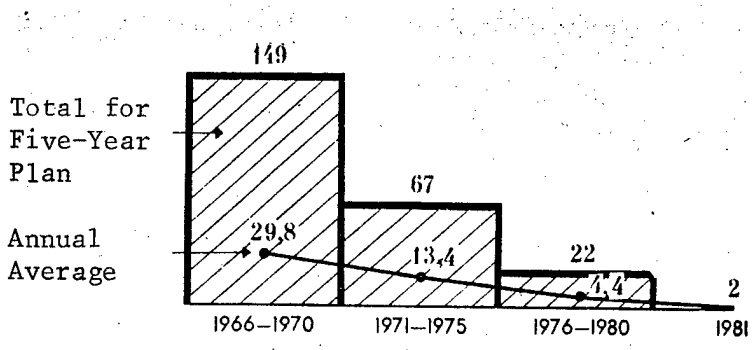


Assortment of Footwear Produced at Enterprises of Footwear Industry of USSR Ministry of Light Industry, %

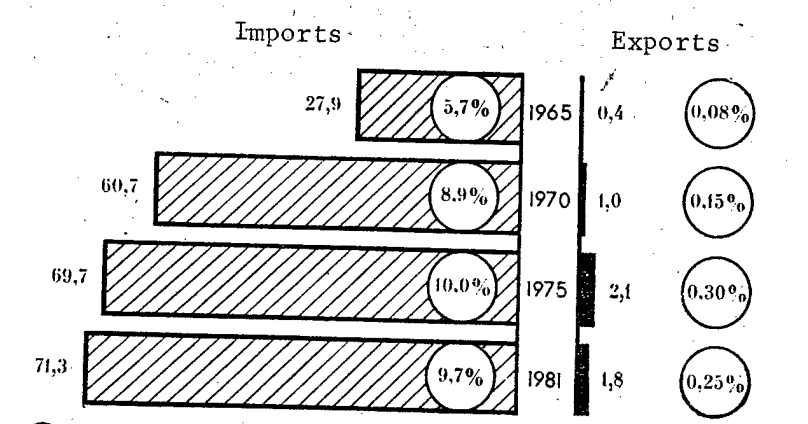



In 1950 as compared to 1975 the output of footwear with the State Emblem of Quality increased 10.8-fold, and with the index N--1.3-fold at footwear enterprises of the USSR Ministry of Light Industry as a whole. The average price of footwear increased by 19.8 percent, which is related mainly to the production of more material-intensive and labor-intensive models of improved quality in keeping with the changes in fashion. In 1980 70 percent of the rejections of footwear resulted from production defects (the sole came unglued, poor-quality stitching, mechanical damage, etc.) and 30 percent--defects in raw material.

Startup of Capacities for Producing Leather Footwear Through Construction of New and Expansion and Renovation of Existing Footwear Industry Enterprises, Millions of Pair

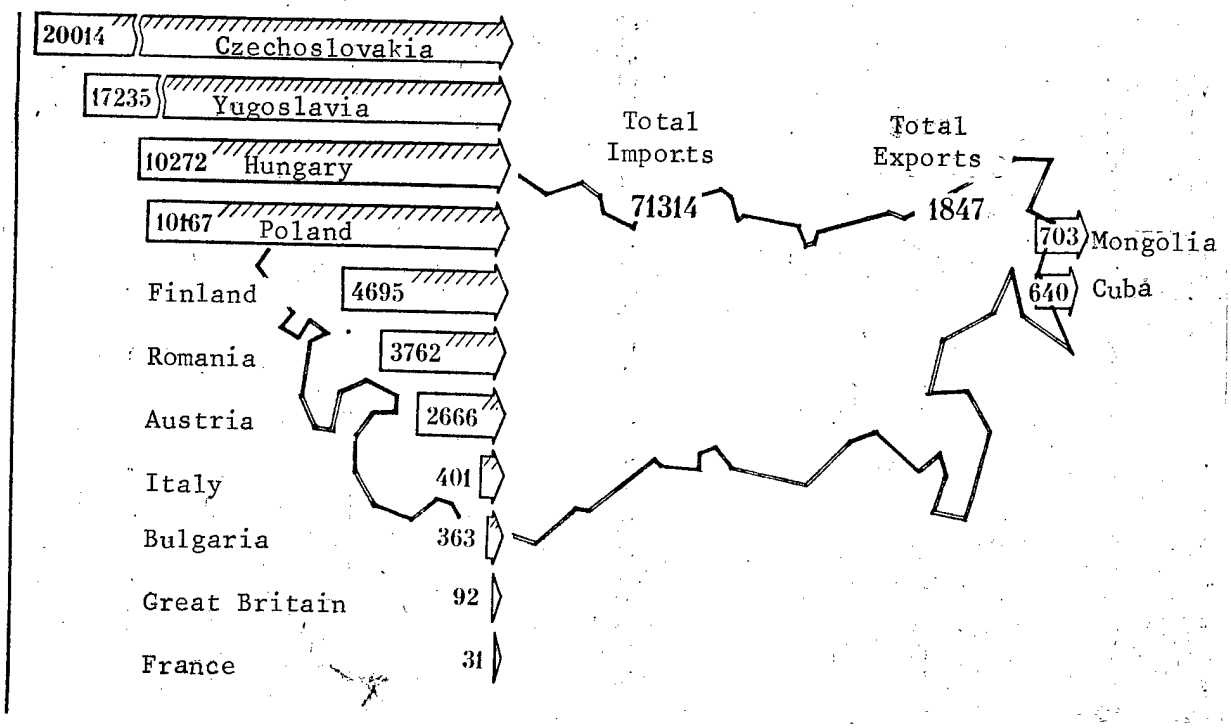



Soviet Exports and Imports of Leather Footwear, Millions of Pairs




(%) Ratio between exports (imports) and production of leather footwear in USSR.

Geographical Distribution of Soviet Exports and Imports of Leather Footwear in 1981, Thousands of Pairs






11772
CSO: 1860/169

PIVOTAL ROLE OF FOREMEN STRESSED

Novosibirsk EKO: EKONOMIKA I ORGANIZATSIYA PROMYSHELNNOGO PROIZVODSTVA in Russian No 7, Jul 83 (signed to press 2 June 1983) pp 99-104

/Article by B. I. Fomin, Hero of Socialist Labor, candidate of technical sciences, general director of the Elektrosila Production Association: "The Foreman--A Central Figure of the Primary Administrative Unit"/

/Text/ The course toward all-around intensification of production persistently requires high efficiency in the operation of all units of administrative systems. The system of production administration is in especially critical need of a reliable primary engineering unit directly in the shops. Science gives many useful recommendations regarding administration. Unfortunately, they are frequently general in nature, and the weakest point is related to problems of line foremen.

The central figure among the line managers is undoubtedly the foreman of the production section. For he is in charge of the process of creating material values in the working positions. He is the one who has operational control over the personnel, technical equipment and materials. Labor productivity, product quality, and the efficiency and effectiveness of the utilization of materials and fixed capital depend largely on the level of skills and initiative of production foremen and on the correctness of their decisions regarding the selection of forms of labor organization, technological control and labor discipline. The foreman should organize socialist competition in the section and he is the only one of the engineering and technical personnel who educates the workers each day as a decisive force in production. Therefore we fully share the concern about the fact that this primary administrative unit today is inadequately staffed, about the fact that foremen positions more frequently than other administrative positions have unfilled vacancies, which was discussed at the EKO "round table" and in an article by the director of the Kishinev Signal plant, N. T. Bordyugov.*

A whole number of circumstances make it more difficult for the production foreman to successfully fulfill his main tasks. The section foreman sometimes works without a firm plan and is guided by one-time assignments which are not supported with resources. Hence the need to abandon the functions of operational support of the working positions.

*EKO, 1982, Nos 9 and 11.

In the large shops recently, in keeping with the standard structures, a sufficient staff of technologists, dispatchers, norm setters, batchers, transportation foremen and warehouse workers has been created. And this is a correct tendency. But the responsibility of these functional specialists is still inadequate.

The production foreman does not manage the auxiliary workers--the crane operators, the sling operators or the drivers of electric cars and other intrashop means of transportation. But he needs them. Sometimes there is nothing left for him to do but to become a sling operator himself or participate in the transportation of cargo. Under these conditions the time and energy of the foreman are frequently expended in vain. His function--for introducing measures for technical progress and scientific organization of labor, for providing for the required product quality, for instilling in the collective a communist attitude toward labor, organizing socialist competition and so forth--recede to the background.

The conditions for paying for the labor of the foreman no longer correspond to the degree of his responsibility and complexity of his labor. Almost everywhere the salaries of the foremen are no less than one-third less than the average earnings of workers in his section. This leads to exceptionally high turnover of line foremen. In the most difficult and, consequently, most responsible shops of Elektrosila during 3-4 years the staff of foremen sometimes changes completely, and the association as a whole annually loses up to 20 percent of them. And the foreman is in precisely that category of engineering and technical personnel where tenure and experience are most necessary.

To the shortcomings in the payment for the labor of foremen one can add the incorrect policy of the USSR Ministry of Higher and Secondary Specialized Education which, in spite of the constant and persistent demands of the enterprises, annually and at progressive rates reduces the training of engineers in specialties that are especially important to production, for example, in the specialty of "cold processing of metals." As a result the plants when staffing metal processing sections with foremen (and this is a very important section of the work of any machine building enterprise) are forced to turn to practical workers or engineers of another profile.

What has been said is illustrated by the following figures. During 3 years (from 1978 through 1981) two of the leading plants of Elektrosila--the head plant with an immense volume of machine processing and cold stamping, and the Leningrad electrical machine building, whose volume is almost as great, received only 10 (!) young specialists in cold processing of metals. The turnover of the foremen in the machine and stamping sections of both plants during that same time was almost three times this figure.

The question of shortcomings in wages, whose harmful consequences are being painfully felt today, probably at every plant, did not come up just today. As early as 1977 the CPSU Central Committee and the USSR Council of Ministers adopted a decree on measures for further increasing the role of the foreman of the production section of industrial enterprises. This document introduced the title "foreman first class" and "foreman second class" with the establishment

of increments to wages for the more skilled foremen of up to 30 percent of the salary. But the USSR State Committee for Labor and Wages, which was to implement this instruction, incorrectly evaluated the situation that exists at the enterprises. In the standard provisions concerning the awarding of increments for class rating as a source of payments, which it issued, it indicates almost the most limited fund at the enterprise for personal increments for highly skilled specialists. And the State Committee for Labor and Wages could not but know that most of the funds expended from this source at the plants were in any case used for paying foremen and senior foremen, with a clear limitation on the skilled workers in other occupations.

As a result, having hundreds of foremen whose labor results meet the criteria for awarding a class rating, at Elektrosila as at other enterprises of our profile it was necessary to artificially limit the number of foremen who receive this increment. As of today little more than 3 dozen of them do, that is, less than 1 foreman per large shop. With this scale the increment for class rating becomes more of a rank of honor which is difficult to achieve than a mass stimulus for initiative and creativity among the foremen as it was initially intended to be.

In the same decree all ministers were ordered in 1977-1978 to develop and approve branch normatives for the number of foremen, taking into account the volume, technology and shift work of production, the level of its mechanization and automation, the quantity and complexity of equipment that is used, the number of workers in the production section and other indicators. If one approaches this strictly, the enterprises of the majority of branches up to the present time do not have such normatives. If they had them it would be possible if necessary to raise the question of additional payments for the most experienced masters who are working most efficiently for special complexity and increased volume of work that is done.

The interests of production require a significant increase in the role of the foreman as an authorized manager of the primary production unit, especially in connection with the changeover to extensive utilization of the brigade form of labor organization. The brigade which operates under a single order is becoming the main structural unit of the section managed by the foreman.

Even today more than 60 percent of the piece-rate workers of Elektrosila are included in specialized and comprehensive brigades, and this process is continuing to develop. The changeover to the brigade form largely changes the daily labor of the foreman, releasing him from a number of labor-intensive organizational functions, and it frees him for the truly creative work of the manager and engineer. For example, the brigade leader takes over from the foreman such functions as efficient distribution of work within the brigade, organization of combining of professions and operational interchangeability, control over labor discipline, and some of the functions of technological control that determine the interrelations with the dispatcher staff. With correct organization of autonomous financing the brigade is responsible for economizing on raw materials and for product quality. In a developed brigade collective problems of correct distribution of wages are solved more simply. Such a brigade, on its own initiative, is oriented not simply toward fulfilling the volume, but toward achieving the best final result.

The brigade form, while relieving the foreman of many routine organizational functions, places higher requirements on him with respect to all aspects of labor organization in the section. Brigade labor, for example, is especially intolerable to interruptions in the supply of materials and technological fittings. The collective opinion of the workers of the brigade creates essentially greater difficulties when there are imperfect labor norms or technologies, or when they are not properly supplied with work or transportation.

Thus in order for the master to be an all-around skilled manager, it is necessary to resolve operationally and efficiently the entire complex of problems that are related to increasing his role and improving the organization of labor and wages.

It is necessary to take immediate measures for a sharp increase in the number of graduates of VUZ s in the most crucial production occupations, and also for increasing the skills of these specialists as potential managers of the lower production level.

With the expansion of the rights of brigade leaders and brigade councils, it is apparently also necessary to regulate more clearly in the provisions about brigades the responsibility of local collectives of workers. In particular, it is necessary to establish responsibility for prompt mobilization of operational reserves of the brigade for fulfillment of one-time auxiliary, transportation and simple repair work, for effective dissemination of leading work methods in the brigade, and for revealing and rectifying erroneously established and insufficiently difficult labor norms.

In order for the production foreman to work at full value as a manager, it is necessary to organize his personal labor correctly as well. In particular it is necessary to have specific systems of intrashop negotiation communications which make it possible for him to communicate efficiently not only with the management of the shop, the outside sphere and the section service points, but also with the working positions. It is extremely important for these systems, like other organizational equipment needed by the foreman to be centrally manufactured at enterprises of the Ministry of Instrument Making, Automation and Control Systems and the Ministry of the Communications Equipment Industry, taking into account the peculiarities of the subsequent operation in specific plants and shops.

The section foreman, in order to be responsible for the plan, must undoubtedly influence more actively the earnings of his subordinates, especially when determining the amounts of bonuses for quality and labor productivity and economizing on materials. He should also have a real right to evaluate and adjust the time norms and technological processes that are assigned to the section.

In difficult sections with a large volume of routine organizational functions the administration of the enterprises should have a real right to introduce the duty of assistant foreman who is capable of taking on this kind of work. There is no doubt that it should be regarded as expedient to introduce bonuses for the foremen, which are paid from the savings on the wage fund in his

section. And, finally, it is necessary to solve first of all the problem of the earnings of the foreman.

A comprehensive solution to all of the aforementioned aspects of labor oganization of the production foreman will be an important step on the path to scientifically substantiated intensification of production, will increase the authority of the foreman as an effective manager of the primary production unit and will enable him to realistically acquire those rights and responsibilities which are necessary in order for him to play the role of an implementer of ideas related to technical, organizational and social progress among workers of the enterprise.



11772
CSO: 1820/169

PRELIMINARY RESULTS OF STUDY ON WORKERS' HOUSING AND INCOME EXPECTATIONS

Novosibirsk EKO: EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA in Russian No 7, Jul 83 (signed to press 2 June 1983) pp 105-108

/Article by A. G. Simakov, candidate of philosophical sciences, Higher School of Professional Advancement imeni N. M. Shvernik (Moscow): "Residence and Earnings in Estimation of Workers"/

/Text/ In order to study the needs of industrial workers, we conducted an investigation at 6 enterprises that represent the main branches of industry in Ryazan. The enterprises we selected are average in size, labor turnover and condition of labor discipline. The investigation included a questionnaire, an analysis of documents and observations. Regionalized representative selection was used. We questioned 1,497 workers, 173 foremen, and 43 shop chiefs. A comparison with data from state statistics confirmed that the results obtained were representative of the social group being studied.

Our research does not claim to make broad generalizations, but the data that have been gathered can be useful for clarifying the level of the needs and the standard of living in its dynamics and so forth. They can also be used for the socio-economic development of the enterprise, branch or region.

Let us begin with the satisfaction with housing. According to data of the questionnaire, 22 percent of the workers are completely satisfied with their living conditions. Another 14.6 percent of those questioned expressed general satisfaction, while being dissatisfied with individual characteristics of the housing. Some workers expressed one degree or another of dissatisfaction.

Along with the fairly well-known dependency (a clearly expressed increase in satisfaction with living conditions on the reduction of the number of members in the family per one room), the table gives a clear reference point: working families consider the ideal to be one room per person. Moreover, the table demonstrates an interesting effect: further expansion of the dwelling space appreciably reduces the satisfaction. Obviously, families with more than one room per person begin to be guided by another scale of values, which in itself is worthy of more attentive study.

Table 1. Satisfaction With Living Conditions

| Description of living conditions, people per room | Proportion of those questioned, % | |
|---|---|---|
| | Fully satisfied | Not satisfied |
| Less than 1 | 50.0 | 17.3 |
| 1 | 63.0 | 9.4 |
| 2 | 25.0 | 29.9 |

We shall give certain figures concerning the attitude of those questioned toward the level of monetary income. From Table 2 it is clear how regularly satisfaction with the material situation increases as the family's monetary income increases and how the proportion of those who are dissatisfied decreases. But in practice there is only a slight change in families whose income is between 51 and 125 rubles per person. Only beyond this level does the satisfaction with the material situation increase appreciably, while the amount of dissatisfaction decreases significantly. But the data of the "limit" cannot be traced so clearly as when evaluating satisfaction with housing. And the differences between the polar categories of those questioned, determined according to the indicator of monetary income is considerably less than among workers who are provided with various kinds of housing.

Table 2. Satisfaction With Material Position

| Monthly income per family member, rubles | Proportion of those questioned, % | |
|---|---|---|
| | Fully satisfied | Not satisfied |
| 25-50 | 8.7 | 40.1 |
| 51-75 | 10.2 | 27.2 |
| 76-100 | 17.3 | 23.3 |
| 101-125 | 23.7 | 22.0 |
| 126-150 | 30.5 | 14.3 |
| More than 150 | 51.2 | 7.3 |

It is obvious that monetary income is a more dynamic component than the provision of housing. A person evaluates his material position by comparing it with others. This depends largely on the level of demand and other purely personal characteristics. This is why it is so difficult to determine the level of income per family member which can be regarded as optimal, providing for the greatest satisfaction of all representatives of a given social group. And housing conditions are evaluated by an individual to a greater degree depending on the existing standards of domestic and socio-psychological comfort.

Wages are the main source of material well-being. The amount of them largely determines the level of consumption and the volume of goods and services used by the members of the socialist society for satisfying their needs. Regulation of the amount of wages is used to stimulate labor. The degree of satisfaction of those questioned with their earnings is shown in Table 3.

Table 3. Satisfaction With Amount of Earnings

| Earnings, rubles* | Proportion of those questioned, % | |
|---|---|---|
| | Satisfied | Not Satisfied |
| 75-100 | 25.3 | 50.7 |
| 101-125 | 29.7 | 45.9 |
| 126-150 | 29.1 | 37.8 |
| 151-175 | 28.6 | 36.7 |
| 176-200 | 36.1 | 27.8 |
| 201-250 | 51.2 | 15.9 |
| 251-300 | 53.7 | 13.0 |

*Those with earnings of more than 300 rubles were excluded from the analysis because of the small number of them.

As with the evaluations of the state of living conditions, there is a clearly expressed threshold, a breaking point, 175 rubles. Among those who receive less earnings the proportion of people who are not satisifed is greater than those who are fully satisfied. The decisive breakoff point in the evaluation comes with workers who have 176-200 rubles a month. In the next category of workers (201-250 rubles) the proportion of people who are fully satisfied with their earnings is the absolute majority, but the increase in the amount beyond this limit brings practically no changes in its evaluation. This is an interesting aspect of the ideas of working families about the standard of living. Responses to the following question--about the desired amount of earnings (see Table 4)--are a direct continuation of this.

The data that were obtained show a very interesting dependency between the actual and desired earnings. This dependency also deserves deeper study and various kinds of analysis. We are giving it simply as information that might be useful to managers of enterprises and plant sociologists.

The author understands that there is a certain amount of artificiality in generalizing data obtained from workers of various categories, foremen and shop chiefs. But it seems that even this average opinion is of a certain value. The types of industries and the professional groups questioned were selected in such a way as to reflect the corresponding proportion in the overall structure of industry and the working class of Ryazan.

Table 4. Actual and Desired Amounts of Earnings, Rubles

| Amount of earnings received | Amount of earnings that could be satisfactory* |
|---|---|
| 75-100 | 143 |
| 101-125 | 177 |
| 126-150 | 209 |
| 151-175 | 229 |
| 176-200 | 251 |
| 201-250 | 277 |
| 251-300 | 278 |

*The figures here are the average arithmetical ones from all the responses of the given group.



11772
CSO: 1820/169

UNCOORDINATED (SURPLUS) INPUTS CAN LEAD TO OUTPUT LOSSES

Novosibirsk EKO: EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA in Russian No 7, Jul 83 (signed to press 2 June 1983) pp 108-112

/Article by Yu. A. Kulikov, senior engineer, Zapsibglavsnab (Novosibirsk): "Losses from . . . Surplus"/

/Text/ Figures from reports and inspections conducted by supply and sales organizations of Zapsibglavsnab and rayon divisions of the oblast Gosbank office show that, in spite of improvement in the planned distribution of material resources, the increased control over their utilization and the strengthening of delivery discipline, at many enterprises of Novosibirsk the supplies of raw and processed materials considerably exceed the established normatives. These include rolled metal, lock fittings, cable, chemicals, refractories, hardware, instruments, batching items and other valuable products for which there is a critical need at other enterprises.

A good deal has been written in the press about the imperfections in material and technical supply which force the managers to provide themselves with everything they need (and frequently what they do not need) in reserve (most frequently excessive). If one cannot have the necessary processed materials, raw materials and batching items, one can create an exchange fund from available values. "It does not hurt to have a reserve," "If you want to live, be able to wheel and deal"--such is the simple philosophy of many supply workers and managers. Add to this the imperfect methods and organization of norm setting and material interrelations among enterprises and we grasp the reasons which are known to all for the appearance of above-normative reserves. They seem so inevitable that managers give in to them and do not even try to fight against them. Yet above-normative reserves cause considerable harm not only to the national economy as a whole, but also to collectives of specific enterprises and associations. We should like to discuss in greater detail this less well-known aspect of the problem.

At any enterprise even the simplist product undergoes changes with time: materials change, technology for processing them improves, designs, components and parts are perfected, and so forth. By storing up raw materials, processed materials and batching items for an extended time, as is sometimes the case, we, simply speaking, throw money into the wind. Moreover, with the shortage of warehouse space at almost all enterprises, material values are stored, as a rule, under unfavorable conditions, at the wrong temperatures, and they are

subjected to the affects of atmospheric precipitation, and then they are spoiled and written off. And if they are still used in items, by reducing their quality they frequently increase rejections. In this case one loses not only materials, but also working time.

At enterprises that have above-normative and unutilized material values the outlays for operation of warehouse facilities and means of mechanization are greater. The corresponding plant services and warehouse workers, because of the overloading of the warehouses and the unsatisfactory accounting, spend considerably more time on searching for and delivering the necessary materials to the working positions.

All these are direct losses. It is not difficult to notice them. The situation is more complicated with indirect financial losses. The link between above-normative stocks and incentive funds is not immediately traced. Nonetheless it has been established that at enterprises that regularly fulfill the assignments for bringing above-normative stocks into economic circulation, the turnover of the normed circulating capital is retarded. The retardation of the circulation along with the relatively large proportion of material values that are not credited by the Gosbank (an average of 10-20 percent and certain enterprises are legally given credit for no more than half of the above-normative supplies) forces them to bring in various nonplanned sources of financing, such as payment credit, consumer funds, credit for above-normative stocks, and so forth.

Non-planned sources cost the enterprises considerably more than special-purpose credit since it is necessary to pay higher bank interest for them, large fines and penalties for the utilization of the funds of the supplier enterprises. For example, from the results of 1980 the Siblitmash plant paid the Gosbank 722,000 rubles for the utilization of more expensive credit instead of 220,000 rubles, and the Sibelektroterm association--693,000 rubles instead of 286,000 rubles. Additionally, Siblitmash paid 270,000 rubles in penalties for holding up payments to the suppliers. This is what happens to what would seem to be a noble desire on the part of executives to store up excessive values of various kinds.

Above-normative and unutilized material values increase the production outlays, they aggravate relations with the Gosbank and the suppliers, and they reduce profit; in short, they undermine the financial condition. As a result labor collectives suffer since all economic incentive funds at these enterprises are reduced. Take for example, the Sibelektroterm association. It is widely known for its unique products, the constant introduction of the achievements of science and technology, the improvement of technology and the high culture of labor. The association has achieved good results in economizing on material resources or, more precisely, in individual areas of this work. Thus the reduction of the proportional material-intensiveness which was achieved as early as the planning stage, the standardization of many parts and components and the application of progressive technology (cutting of metal with electronic computers, blast welding and so forth) make it possible to save more than 1,000 tons of rolled ferrous and nonferrous metals annually.

But above-normative supplies in this association during the years of the 10th Five-Year Plan increased from 2.9 to 5.5 million rubles. Although in 1980 the association brought into economic circulation almost 2 million rubles' worth of surplus values, at the beginning of 1981 their remained a total of 5.7 million rubles' worth, including those that had remained without being moved for more than a year--almost 900,000 rubles' worth. The association covered the additional need for circulating capital mainly with credit. In 1980 alone it obtained more than 20 million rubles' worth of credit, of which 10 million rubles were defaulted loans. Because of the utilization of the most expensive credit the association overpaid the Gosbank more than 400,000 rubles; naturally, profit was reduced by this amount and incentive funds also decreased. Moreover, having fulfilled all the main indicators for 1980 and barely having settled with the Gosbank, the association ended up without a material incentive fund, and had it not been for assistance from the higher organization its collective would not have received bonuses.

There are examples were above-normative stocks of material values, even those that have been put into production, impede the fulfillment of the plan. With a shortage of personnel, mainly machine tool operators, which shortage managers of the Tyazhstankogidropess association called one of the main reasons for the failure to fulfill the plan in 1981, these machine tool operators (and material resources) were constantly being diverted into nonplanned production. During the course of the year these people and resources were diverted for creating stockpiles of 48 machines and sets of equipment which were not included in the plan for 1982 either (although during 11 months of 1981 alone the association failed to produce 35 machines and aggregates that were envisioned in the plan for the list of products). As a result, at the beginning of 1981 5.1 million rubles more than was envisioned by the normatives ended up in incomplete production. Incidentally, in incomplete production there are products which have been manufactured under one-time orders but are no longer needed by the clients because of the late filling of the orders and "worthless" stockpiles that are to be written off as losses.

The failure to observe planning discipline and shortcomings in the production and operational planning led to a situation where the Tyazhstankogidropress association, having on 1 November 1981 a residual of incomplete production in the amount of 16.4 million rubles, was unable to fulfill the November sales plan by an amount of 3.8 million rubles. It did not fulfill the annual plan either.

If one is to consider the consequences of above-normative stocks ccmprehensively, one cannot but discuss the moral losses as well. Poor storage of material values, which leads to large losses, and cases of squandering them reduce to zero the organizational and propaganda work for instilling feelings of thriftiness and a careful attitude toward the public good which are conducted by social organizations in labor collectives.

Large expenditures are not necessary in order to avoid losses related to above-normative stocks. Here it is necessary to have joint planning-analytical and organizational activity on the part of many divisions (and not just the supply division)--the production, financial, technological, sales and several others.

Zapsibglavsnab and the oblast Gosbank office render essential assistance in selling above-normative and surplus material values. And those enterprises which work on reducing surpluses in a planned way, which conscientiously follow the recommendations of supply-sales and financial agencies, as a rule, do not have large stocks of material values, especially those that are not credited by the Gosbank, or the losses involved with them.

Recently there has been a marked improvement in the work on above-normative stocks at the Plant imeni XVI parts"yezd, the precision machine building plant, the metallurgical plant, Sibtekstil'mash, Sibgiprogormash and a number of other enterprises. At these fairly good results are produced by various forms of control over the deliveries of batching items and materials, taking into account the schedule for the output of products, as well as the organization of small subdivisions (groups, bureaus).

The experience of the precision machine building plant deserves dissemination. More than 10 years ago a small subdivision was created there--a group for mobilizing internal resources whose functions include the sale of above-normative stocks, rejected components and parts, and also production wastes. The regulation of the group's activity (the introduction of periodic reporting, approved sales plans, instructions on the sales policy) and the close business relations of its workers with supply and sales organizations and other industrial enterprises make it possible for the group to cope successfully with its tasks. The annual sales volume of all kinds of excess values during the time of its existence has increased almost 5-fold and at the present time amounts to more than 2 million rubles. While a couple of years ago the plant was forced to bring payment credit, credit for temporary needs and also financial assistance from the ministry in an overall amount of up to 10 million rubles into circulation in order to cover above-normative commodity and material values, and it also had defaulted indebtedness to the Gosbank, by 1981 the amounts of credit drecreased to one-half-one-third the former level. And the enterprise did not have defaulted indebtedness on loans either.



11772
CSO: 1820/169

MECHANISM FOR GENERATING, IMPLEMENTING EFFICIENCY IMPROVEMENT SUGGESTIONS

Novosibirsk EKO: EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA in Russian No 7, Jul 83 (signed to press 2 June 1983) pp 113-116

/Article by I. A. Cherevko, doctor of economic sciences, Lvov branch of the Ukrainian SSR Academy of Sciences, and N. I. Dmitriyev, patent expert (Lvov): "Is Everything Well in the Office for Rationalization and Inventions?"/

/Text/ The work of the BRIZ /Office for Rationalization and Inventions/ is multifaceted and interesting. But it has one essential difficulty. Nobody at the enterprise is obligated to submit efficiency suggestions. This is a voluntary matter which cannot be ordered. At the same time an idea can strike anyone, and the doors of the BRIZ are always open to it.

It seems understood: since efficiency work is voluntary it is necessary to conduct certain measures of an agitation nature. And it is necessary to attract to creativity the best trained and most technically literate production workers. Unfortunately, they do not always take this into account in BRIZ's. They work with everyone indiscriminately, if only it is in keeping with the plan for mass organizational work. The same measures are included in the plan from year to year. And here is the result. During the past five-year plan the collectives of efficiency experts and inventors at the bus plant and the Prikarpatpromarmatura production association has decreased. At the L'vovpribor plant and in the Avtopogruzchik and L'vovkhimsel'mash associations the number of authors of proposals has increased, but the economic indicators for efficiency work have deteriorated. This means that the work has been done in vain, only for a "reference" figure. A similar tendency can be observed in the country as a whole. Thus, according to statistical data, in 1981 as compared to 1980 the number of authors of efficiency proposals decreased by 100,000 and the number of innovations that were submitted and introduced decreased by 200,000 and 74,000, respectively. The savings from the utilization of efficiency proposals have decreased by 100 million rubles.

Another important area of BRIZ work is to provide production workers with subject plans. It would be possible to anlayze the economic results of the activity of one's enterprise and also, as they say, "drive" into the plan all losses that are revealed. Let those who want to dare to eliminate them! But the BRIZ workers have reduced the drawing up of this plan to a formality. Judge

for yourselves. In the Avtopogruzchik production association the number of subjects in the plan is 141, and 1,320 proposals have been developed, at the L'vovpribor plant these figures are 56 and 622, respectively, at the bus plant--202 and 1,258, respectively, and at the Prikarpatpromarmatura production association--49 and 136, respectively.

One of the reasons for the deterioration of the situation with respect to the development of efficiency work is the lack of attention, assistance and demandingness for BRIZ workers on the part of the managers of the enterprises. The effect of voluntary participation in technical creativity is apparently diminished. Let them create something there, but the results of their labor will not be apparent in the economy of the enterprise anyway. Therefore nothing can be demanded of BRIZ workers. Whatever they do is all right.

Certain state agencies are in debt to BRIZ workers. The Scientific Research Institute of Labor has published the "Qualifications Reference Manual for Positions of Employees." For the BRIZ it envisions the positions of chief and engineer, but there is no technician.* One might ask whether a specialist with a higher education should not fill in the blanks of certificates for efficiency proposals and card catalogues of efficiency experts and inventors, and carry on correspondence.

If one is to believe the reference book, the work for introducing efficiency proposals should be carried out only by an engineer for repair of equipment. This responsibility is not envisioned for other specialists. The USSR State Committe for Labor and Wages also "offended" the BRIZ's by the number of workers. It was recalled that the activity of the services extends to the entire production collective. So it is. There are about 28,000 people working at the 5 enterprises of Lvov. Of these 12 BRIZ workers are engaged in the organization of technical creativity. Yet from the standpoint of the Central Bureau of Industrial Normatives for Labor, even this number is too many. According to its data, for an enterprise with more than 20,000 workers and more than 60 independent subdivisions the maximum composition of the BRIZ is 6.18 people (the table that was compiled was rounded out to two-hundredths).** And the number of BRIZ workers did not change, even if the number of proposals coming in simultaneously increases 3.3-fold, those accepted--1.7-fold, and those introduced--2.5-fold.

As a result the normatives make it possible to maintain a stable number of BRIZ workers for a long time. Thus the BRIZ chief of the L'vovkhimsel'mash production association could not recall when the bureau had been given another staff unit: "It was either under the sovnarkhozes or even before that." By now the tiny little plant has grown into an association with several thousand workers. And the BRIZ still "corresponds" in its numbers to the normatives.

---

*"Kvalifikatsionnyy spravochnik dolzhnostey sluzhashchikh" /Qualifications Reference for Positions of Employees/, Moscow, 1976, pp 146-148 (Scientific Research Institute of Labor).

**"Normativy chislennosti inzhenerov po ratsionalizatsii i izobretatel'stvu" /Normatives for Number of Engineers for Efficiency Work and Inventions/, Moscow, 1974, p 16 (Scientific Research Institute of Labor).

In order to arouse initiative and utilize it effectively, it is necessary to work with people constantly and actively. With the entire collective, its separate groups and individually. No machine can be entrusted with this vital work. And now, with this number, it is practically impossible to help the BRIZ's. For example, they have developed for the Lvov branch of the Institute of Economics of the Ukrainian SSR Academy of Sciences a better system for organizing technical creativity of the enterprise, but there is nobody to introduce it. The BRIZ workers hardly manage to carry out the work of intermediaries. They register th e proposals, submit them for consideration, receive further information about introduction, calculate the effect, and that is all. Other work remains in the background.

It would be correct to establish a direct dependency between the number of BRIZ specialists and the number of workers at the enterprise. For machine building, for example, it could be 1:1,000. If the number of workers increased by a thousand, the thousandth would go to work in the BRIZ. This innovation would not require enlisting additional labor resources. In 1981, for example, in the Avtopogruzchik production association, for example, as a result of the utilization of efficiency proposals 26 workers were released, at the bus plant --28 workers were released, and at other enterprises the figures were no less. The situation that has arisen exacerbates the earmarked tendency toward increasing the paperwork of the BRIZ's.

A bonus fund is being created to encourage all those who participate in contributing to technical creativity at the enterprises. The USSR State Committee for Labor and Wages has introduced a rule: the participation of each individual in this work should be confirmed by a document or protocol. These documents must be signed by the director and the chief of the BRIZ.* But who will draw them up? It is not indicated. At the Avtopogruzchik production association in 1980 675 efficiency proposals were introduced. From practice it is known that for each proposal a minimum of 3 workers receive the right to a bonus. The total was 2,025 documents or protocols. And all of them must be signed by the director . . . But as the distributor of the credit he still signs the order for the payment of the bonus. Therefore he takes on the responsibility for the correctness of the incentives.

In order to determine the author's remuneration for proposals whose utilization does not create a savings, the USSR State Committee for Inventions and Discoveries has developed and introduced a special blank form: calculation--substantiation. It is to be signed by the director, the head engineer and the manager of the economic service. It seems clear that the signature of the last one confirms the lack of an economic effect. On the contrary. In the remark on the blank form it is written: "The lack of savings is substantiated in an act approved by the manager of the enterprise . . . , which is an indispensible part of the calculation-substantiation of the amount of remuneration."** Another document, another signature from the director, and again someone must draw the

*"Polozheniye o poryadke premirovaniya za sodeystviye izobretatel'stvu i ratsionalizatsii i ispol'zovaniya bydelennykh dlya etikh tseley sredstv" [Provisions on the Policy for Awarding Bonuses for Contributing to Inventions and Efficiency Work and Utilization of Funds Allotted for These Purposes], Moscow, 1981, p 4 (VNIIPI).

**USSR Legislation on Invention Work, Vol I, Moscow, 1979, p 247 (TsNIIPI).

document up and account for it. Is it really necessary for every piece of paper to be "propped up" by the authority of another? A BRIZ worker must also fasten a round calculation-substantiation stamp to it. It is a mystery why. There is no explanation anywhere. Yet all these are labor expenditures and, it seems to us, idle ones.

We have come to understand economic effect as meaning economizing on material and labor resources.

But . . . in the first place, as a rule, we do not know where these saved resources have gone.

In the second place, even the savings in physical form exist within the first year of the utilization of the proposal. At the beginning of the next year the funds for materials have been revised, the wage fund has been adjusted and, in general, the enterprise has no savings. It again spends as much as it is supposed to, and no less.

The profit of the enterprises increases because of the utilization of inventions and efficiency proposals. The price of the item has remained the same, but the expenditures have decreased. The income has also increased by the amount of the reduction of the expenditures. In essence, each year we calculate this additional profit and include it in the report, but for some reason we cannot call it ours. It is necessary to introduce a new line in the balance of the enterprise: profit from the utilization of inventions and efficiency proposals. Correspondingly, an indicator will appear in the country's budget: national income from the utilization of these innovations. Everything stands still. At the enterprises and in the country as a whole the importance of our achievements will be clear when efficiency experts and inventors become active.



11772
CSO: 1820/169

BETTER, NOT MORE, INSPECTORS ENSURE QUALITY

Novosibirsk EKO: EKONOMIKA I ORGANIZATSIYA PROMYSHELNNOGO PROIZVODSTVA in Russian No 7, Jul 83 (signed to press 2 June 1983) pp 117-127

/Article by I. A. Rudokas, Sigma Association (Vilnius): "Fewer Controllers--Better Quality"/

/Text/ The title of the article will probably seem incorrect or even absurd to many. For if we wish to improve quality it is necessary to step up control, and the number of controllers should be increased, but in no way should the opposite be the case . . .

But let us try to look into the problem more thoroughly.

It is hardly worth our time to prove that far from always and far from everywhere does the quality depend only on control. Nonetheless the link between quality and level of qualifications of OTK /technical control division/ personnel and the degree of perfection of organization, technology and equipment for control is fairly close--this is also known. The question naturally arises:

Is Technical Control at the Plants Suitable for Us Today?

Relying on our own work experience in the OTK and in the "vicinity" of this service, I shall say: not altogether! Of course tens and hundreds of thousands of controllers of various ranks do a large amount of necessary and important work: they inspect, analyze, register rejections, and sometimes warn about them, thus defending the interests of the consumer, the state and . . . the enterprise itself. In technical control divisions there are many enthusiasts and efficiency experts; these divisions enjoy authority among production workers, especially in places where quantity and quality get along fairly well with one another as, for example, in th e plants of our association.

But one cannot but note the shortcomings in the work of plant OTK's either. In the first place these include large losses from rejected work directly in production. On the scale of the country they amount to billions, and far from everything is taken into account in th ese sums. For each case of rejected work in production means not only lost time, material and energy, but also a violation of the rhythm of the normal planned course of the production process,

an interruption which not only adds to the concerns of the administration, but also causes idle time among the consumers throughout the entire technological chain, which is fairly long. Apparently the OTK should be more active in the stage of preventing rejected work. Now registration of rejected work prevails, as a rule, to the detriment of warning about it.

A second serious shortcoming is the fairly large amount of slipshod work which is marked by the stamp of the OTK as suitable products (sometimes even with the Emblem of Quality!) which goes to other shops and related enterprises as well as to the consumer. An illustration of this assertion is, for example, the article "The Button From the Tractor,"* which gives many scandalous cases of this kind. Sometimes this is brought about by poor organization of control and sometimes by inadequate adherence to principles, inadequate qualifications, poor quality of the work of individual controllers, concentration of attention on simple, external defects in the products at the expense of more complciated parameters, and so forth.

There are also other, more "subtle" defects in the control staff. For example, during assembly they discover a defect that was caused in the machine shop, but the controllers do not fill out the document; they delay it protecting their colleagues in the machine shop from unpleasantness since they are their own people . . .

There is a fairly large number of people employed on the OTK staff, and this circumstance under the conditions of the strained balance of labor resources also bothers us and sometimes causes doubts: can we generally put up with actual duplication of control operations? Why do we not trust a person who performs a technological operation, but another worker, the inspector, must be trusted? Let us also recall that the percentage of release of products by the OTK with the first presentation usually amounts to about 85-95 percent!

One should especially discuss the relations among the workers, foremen, and technologists, on the one hand, and the OTK workers, on the other. These relations are far from always and far from ever as good and as businesslike as one might expect, keeping in mind the indisputable common interests and goals of all of them. Why? Although the OTK has many tasks and functions (the provisions for the OTK of the Ministry of Instrument Making, Automation Equipment and Control Systems, for example, register 31 basic functions alone), the most comprehensible and therefore frequently the major task becomes to search out slipshod work and discover deviations from the blueprints. In principle this is good: slipshod work must be eliminated. But if one looks at this from the point of view of morals, it turns out that we suspect that each worker is inefficient, trying to "slip" his poor-quality work through the OTK as though it were good work. This irritates the workers, and not surprisingly: does such trivial control over the work, say, of a designer, technologist or a bookkeeper really increase responsibility or improve the attitude? And, conversely, they rarely risk doing anything in their own way if they know that it is a "final stage."

*SOTSIALISTICHESKAYA INDUSTRIYA, 23 October 1982.

All these are indisputable truths, but why do we not extend them to the worker? The more so since while the work of the designer, technologist or bookkeeper is usually checked and accepted by his boss, a person who, as a rule, is more qualified and experienced, for the worker it is the opposite: the inspector very rarely has higher qualifications than the worker whose work he is inspecting. The situation seems unnatural, but it is a fact: let us imagine that the work, say, of a surgeon is inspected by a nurse . . . this is unthinkable, absurd, as anyone would admit. But in production it turns out that this is frequently the case and, of course, this has a poor influence on the interrelations and the microclimate.

The complexity and contradictoriness of the aforementioned (far from all!) problems in the sphere of quality control makes it more difficult to resolve them. Very frequently one hears appeals like the following: it is necessary to step up control in all areas of production, to increase the number of control operations because the society and state are sustaining large losses from slipshod work, and the inspectors cannot physically keep up with them. Where are we to find these people if there are not enough of them even in production itself? But it is not even a matter of this: simply stepping up control, along with complicating the relations between the OTK staff and the production workers, would also require additional time for the release of products from the OTK. Moreover, far from all production operations can be inspected, for example, the work of the boring machine operator-coordinator, or the welder-assembler. Everything that can be offered in this case by the technologist is either expensive or not very effective, and therefore in practice one almost always simply relies on the conscience of the worker. Actions in the reverse direction, for example, simple reduction of the volume of control in production, although it promises certain advantages (saving on the time of the inspectors and workers), is still problematical and risky, not only because of practical considerations (there is no guarantee that the quality of the products will not deteriorate), but also because of psychological considerations. It stands in opposition to that great amount of attention we have devoted to problems of quality in past decades.

What can be done to improve control? If both of the methods considered above are unsuitable, let us try to look more deeply into the sources of the unsatisfactory work of technical control at the plants--for they are clearly not random.

What Are the Reasons for Shortcomings?

We have already mentioned one of the reasons--this is the poor qualifications of inspectors, which are brought about by the poor wages and low prestige of work in the OTK. Alas, work in the OTK is not considered interesting, creative or promising, and therefore an active worker or engineer who loves work avoids working in the OTK not only out of ma terial considerations, but also because of motivations related to morale. The situation can hardly be improved by simply increasing the salaries of OTK workers, even if this were possible.

The second reason is a purely technical one: the parameters of the item in general cannot always be verified, and therefore the technologist who draws up the technology for control frequently ends up in a blind alley because of the designer. In turn, the technologists themselves are also greatly indebted to the OTK: according to existing technology of control it is rarely possible to distinguish important control operations from secondary ones--it is thought that it is necessary to check all parameters and all products. With all the external correctness of this principle, it is clear th at the controller cannot check everything; he simply does not have time for this. Certain plants have tried to norm the control operations, and it has turned out that to do this requires 2-3 times more controllers than we have! But how do we solve the problem of controllers? Very simply: they violate technology and select what to inspect and what to pass by, relying on their own experience and knowing that one worker or another is capable and how conscientious he is. It also happens that they do not inspect the most important parameters, but those which are easiest to inspect. If the selection is successful this is good, but if the selection is not successful the consumer ends up with slipshod work. One must add to this the shortage of means of control--both universal and specialized means.

The third reason is organizational in nature. Although the plants have introduced systems of defect-free labor and comprehensive systems of quality control which have forced every one of us to look at problems of quality in a different way, the organization of the OTK has changed little. These divisions have retained their previous "linear" nature and consist mainly of workers, while there are few technical specialists in them and those who do work there are mostly engaged in the performance of administrative functions. This structure of the OTK staff has been brought about by the generally accepted (although, as we have already said, unrealistic) technology of "all-around" control. For its part, the linear structure of the OTK affects the qualitative make up of the personnel--thus certain shortcomings involve others, and they are interwoven among themselves.

As we can see, there are many causes and problems. Where should be begin to improve control?

Where Is The Basic Unit?

It would seem that the basic unit is control technology. In this case technologists are at the center of the problem, maintaining communications between preparation for production and production itself. In the technology of manufacturing any items there are "critical points" which basically determine the quality. The attention of the OTK should be drawn to them. Selective or inspection control should be coordinated with the mechanization and automation of control which is already being applied, statistical methods and so forth. There is no danger that the new direction will impede the "old ones," since all of them are directed toward a common goal--increasing the effectiveness of production.

Introduction of systems of brigade labor at the plants opens up large prospects for radically changing the technology and organization of control. In a collective that is operating according to this principle a young or inexperienced worker is always guaranteed assistance and advise from his more qualified comrade--this considerably reduces defective work. Mutual control contributes to increasing conscientiousness and responsibility, which makes it possible, among other things, to grant more workers and entire brigades the right to perform control operations. Extensive dissemination of the brigade trademark, in addition to reducing the overall number of control operations, can considerably reduce the volume of work of the OTK without harm to the quality of the products. Since particular kinds of work are always assigned to brigades, the possibilities of avoiding responsibility for slipshod work are actually eliminated.

All-around trivial control impedes productive work, especially in the most efficient brigades--the comprehensive ones. They perform several operations in parallel, and the products move from one machine tool to another. And it is simply not possible to work this way with the old technology: every operation had to be done for the entire batch of parts, the products had to be submitted to the OTK and then to the warehouse, and only after this could they be returned to the brigade so that the work could continue. The new organization of labor and the old forms of work of the OTK are clearly contradictory. This contradiction must be resolved as quickly as possible. At plants of our association, for example, steps have been taken in this direction: because of the introduction of brigade planning, the workers of the assembly shops have suggested consolidating planning and accounting units (assembly units) so that the brigade would have a more clear-cut final product. In spite of certain difficulties, the idea was implemented, and this not only reduced the number of orders by an average of half (in individual brigades to one-fifth-one-tenth the former number), but also concentrated control operations, reduced their volume, saved the working time of foremen, brigade leaders, norm setters and inspectors and, incidentally, reduced the possibilities of distorting figures. We also intend to concentrate control operations in processing shops, although the conditions there are more difficult. All these measures did not cause the quality of the products to deteriorate.

Brigade organization of labor is an important lever for solving problems of quality, but for some reason we do not frequently recall this advantage, even though foreign specialists consider it to be one of the most important ones. Foreign scientific periodicals of recent years contain many articles about experience in France, Denmark, Sweden, the FRG and Japan in this area. The ways of enlisting brigades in solving problems of quality are varied: from the transfer of brigades to self-control to the so-called quality control groups. These groups appeared in Japan in 1962-1963, and already by 1972 there were 400,000 of them and they joined together about 5 million workers.* The Japanese experience has been adopted by individual firms of the countries of Western Europe--the FRG, France, Great Britain and Switzerland.

*Kuritsyn, A. I. "Upravleniye v Yaponii" [Control in Japan], Moscow, "Nauka", 1981, p 169.

Depending on the conditions and the specific features of production, other variants of improving the technology of control, even more radical ones, are possible: an example is the experience of the Yerevan Erebuni knitwear factory:* control operations in general have been eliminated here on the basis that slipshod work in one operation can always be easily revealed in the next stage. It would be wrong to recommend the introduction of this system everywhere, but in many plants one can find sections where this experience can be applied without any risk.

It is quite logical, along with the change in the nature of the technology of control, to changeover from all-around control to selective control, and also to change the structure of technical control divisions, their qualitative composition and the principles and methods of their work. If there are fewer control operations there should also be fewer controllers, but this should not be a simple reduction of staff, as is popular here now, but a more profound change. The number of inspection workers who still fulfill the role of rejectors should gradually decrease, and the number of technical specialists who can not only make demands, but also assist and give advise as to what to do to avoid rejected work, should increase. Subsequently, after restructuring the OTK service, these people should predominate. It is also necessary to think about what they should be called--quality inspectors, engineers for quality or something else--but it is not a matter of their name. The main goal is to increase the qualifications and the business authority of OTK workers, to make their activity more critical in analyzing the reasons and preventing slipshod work, and gradually transfomring this function into the main one. For the goal and meaning of any control in administration is not registration and accumulation of data about the past, but the determination of the adjustments that must be made in order to avoid the mistake in the future. We can and should set for the OTK the task which V. I. Lenin at one time set for the worker-peasant inspection teams: ". . . Not only and not even so much 'to catch' and to 'to expose' . . .--as to be able to rectify."** For some reason this requirement has been considered mandatory for any control except for technical. If the OTK could resolve this problem, this would not only increase the economy and effectiveness of control, but would also improve interrelations in production.

In addition to the aforementioned problems, there are larger ones in the area of technical control. Who among us, for example, is interested in the causes of defective work and who generally deals with problems of quality? Designers, technologists, economists, foremen and workers of services for reliability and standardization, laboratory workers--there are many who are involved in this matter, but it would be good if among them there were some main person who would determine the tasks that direct and coordinate the work on these problems. This task is clearly not within the power of the present OTK, and other services have their own functions. This situation is becoming increasingly intolerable since production is becoming increasingly complicated and there

*P. Ayrapetyan, "Trust Without Any Buts . . ." SOTSIALISTICHESKAYA INDUSTRIYA, 28 July 1981.

**Lenin, V. I. "Poln. sobr. soch." [Collected Works], Vol 44, p 127.

are more and more so-called "objective" reasons for poor quality, which, of course, do not make it any easier for the consumer. Therefore it would be quite logical to assign the OTK a leading role in the matter of quality--after the corresponding reorganization. This would be advantageous not only for product quality, but for the entire process of production control: there would be fewer conflicts, cases of lack of coordination, conferences and so forth. But it is not a simple matter to change a policy which has been in effect for decades.

Is Reorganization of the Technical Control Service Realistic?

Specialists assert that the main difficulties in introducing innovations are of a psychological nature. Obviously, this factor will also be the most difficult when changing the technology and organization of control: for, in essence, this is a changeover from extensive to intensive methods of activity, a constituent part of a large and complicated process of intensification of the national economy which, as was noted at the 26th CPSU Congress, in terms of its historic scope, significance and consequences can be compared with socialist industrialization. Hence also the difficulties: to win not with numbers, but with ability would seem to be an ancient rule and one that is not subject to doubt, but in practice there are clearly not enough people who desire to follow it in all branches and spheres of activity. The suggestion to reduce the number of control operations and the number of controllers can be interpreted by some as the summons "Down with the OTK!" In order to have a guarantee against mistakes when developing designs and technologies and when performing technological operations, control is necessary as it was before. This truth does not require proof, just as the need to continue to deal with problems of quality requires no proof. But still in the area of technical control the conditions for radical reforms can be regarded as ripe not only because this is necessary, but also because in past decades a base has been prepared for them: we have created a system of defect-free labor and a comprehensive system of quality control. They have helped not only to solve many problems in the area of quality, but also to avoid outdated judgments and views regarding questions of control, thus having prepared the soil for reorganization of this service. All this was reflected in the standard provisions for the OTK which were approved by the USSR Council of Ministers in 1979; in particular, they contain the requirement to develop and improve the system of technical control.

The introduction of the measures that have been proposed will require the training and retraining of personnel, and technological and organizational measures, including changes in the corresponding standards, standard structures of administration, and job instructions and provisions. It might be necessary to envision in the laws the possibilities of some sanctions against the worst producers of defective work (for example, a reduction of their grade); and this would give more weight to control and would increase the responsibility of the workers.



11772
CSO: 1820/169

NEW ROLE FOR SALES DEPARTMENTS OUTLINED

Novosibirsk EKO: EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA in Russian No 7, Jul 83 (signed to press 2 June 1983) pp 128-129

/Article by V. G. Vititnov, chief of the sales division of the Lyublinskiy Smelting-Machine Plant of the USSR Ministry of Railways: "Changing the Position of the Sales Service!"/

/Text/ Our plant is the head plant in the ministry for producing spare parts for rolling stock of railroads. Each month we send the clients up to 500 caroloads of products.

Now the role of the sales service is increasing, and yet, in my opinion, not enough attention is devoted to this service.

One of the most important indicators of the work of an enterprise is the fulfillment of the state plan. And one judges the degree to which it is fulfilled by the quantity of products that have been released to the warehouse of the sales service. Another important indicator of their activity is the amount of products which have not been delivered under agreements. The material incentives of managers and engineering and technical personnel depend to a significant degree on this. The level of fulfillment of this indicator is also taken into account by the sales service.

Thus additional monetary payments, sometimes quite appreciable ones depend on sales workers today. This link between the functions of the sales service and the monetary incentives creates a potential basis for artificial increases and distortions of report data concerning failures to deliver products, and pressure on sales workers from managers of all levels and even public organizations to transform a possibility into a reality . . . and even the representatives of the sales services themselves are interested in making sure that the enterprise receives the best results--their own well-being depends on this as well.

An especially delicate situation arises when the enterprise does not operate smoothly. In such a situation (and it is a common phenomenon in certain productions) it is difficult for the manager of the sales service to resist and not to draw up a report which would please the eyes of the director. The service has no immunity from pressure. And the solution to the problem, in my opinion, involves eliminating this shortcoming.

In essence, sales workers are representatives of the capital holder, for example, the Gossnab, for dispatching products which are included on the balance of the state and are distributed in keeping with the directives of the Gosplan. This means that the sales service has a right to turn for protection to state agencies, and to do this it would be expedient to change their connection with the enterprises. Under the new conditions this connection should consist in that the sales service receive all products at the state warehouse of Gossnab and other capital holders.

In this case the sales service should have, on the one hand, specific regulations which determine the quantity and time periods for presenting products, packing them, warehousing, storage and transportation, and on the other hand--closer functional ties with Gossnab agencies for product sales.

Representing the Gossnab at a given enterprise and having its own account in the Gosbank, the sales service could keep monetary accounts with the enterprise and act as an independent autonomously financed institution. The material incentives for workers of the service could be made dependent on commodity turnover, and not on the level of fulfillment of the production plan by the enterprise.

It seems that it would be expedient to place the sales service under the control not only of the Gossnab, but also of local soviets of people's deputies; to do this it would be necessary to organize the service on the territorial, and not the production principle. Then the sales services at the enterprises would play the role of authorized representatives of these organizations, acting in the interests of the country's national economy.



11772
CSO: 1820/169

CRITERIA FOR EVALUATING ENGINEER'S JOB PERFORMANCE DISCUSSED

Novosibirsk EKO: EKONOMIKA I ORGANIZATISYA PROMYSHLENNOGO PROIZVODSTVA in Russian No 7, Jul 83 (signed to press 2 June 1983) pp 130-142

/Article by V. V. Mishurova, sector chief, division of automated control systems of the Novosibirsk Oblast production-technical communications administration (Novosibirsk): "Accounting for Engineering Labor"/

> /Text/ The magazine has repeatedly addressed the problem of evaluating the quality of the labor of engineering and technical personnel and scientific workers (see, for example, the articles by V. A. Gaga, "Improvement of Evaluation Systems in Socialist Competition," 1981, No 4; V. A. Ulozas, B. D. Lebedevas and T. P. Lautsevichyus, "Bonuses to Engineering and Technical Personnel--For the Final Result," 1981, No 7; V. K. Tarasov, "Certification of Workers With the Help of Electronic Computers," 1982, No 7). As we know, a large number of various kinds of systems have been created which evaluate in points various indicators that characterize the business qualities of the workers. These systems are directly related to material and moral incentives. But they have not become widespread.
>
> The article offered for the readers' attention discusses the introduction of an original system of accounting for the labor of engineers which is based on their self-evaluation.

The frankness of the discussion seemed unexpected: a manager with a good deal of experience in communicating with people referred to his inability to eliminate the "disturbance of the balance" in the load on workers. Several years ago he became the manager of a division. The collective of the division was on a fairly good accounting system and it seemed incomprehensible why he was dissatisfied with it:

"It is an advanced division, but not everything in the division is advanced. Of the 15 people, 3 could be fired tomorrow if not today."

"Are they absent a lot? Do they not carry out their orders?"

"If they were absent or did not perform their duties it would be simpler. I would fire them. But they are always punctually at their desk, looking attentively at documents spread out before them. But the results leave something to be desired. At first I thought that they were specialists who had just come from the institute, that they would master their jobs and there would be a return. I was mistaken. I divided the division into groups: the volume of work was less and the tasks were more concrete. I hoped that responsibility would appear and initiative would awaken. I hoped in vain. Nothing happened."

"It is necessary to introduce individual planning, and everything will be out in the open."

"You cannot introduce a plan for initiative and creativity. In any case no one has heard of such a thing yet. There is undoubtedly division in the work, but not everyone can always develop an individual plan. The content of the work frequently changes and sometimes a particular proposal turns out to be more valuable than the work itself. Therefore frequently you set a difficult task for the person whom you trust, and a simpler one for a person from whom you can expect nothing. But I am afraid: either I myself will become accustomed to this or my restless enthusiasts will finally become complacent."

"But you can give them incentives, for you are the one who makes decisions about bonuses and vacation passes."

"The bonuses are the same for all. They can be reduced, but to increase them is a losing battle. I tried. Now I encourage the engineers with initiative by not reducing their bonuses. Vacation passes? They are given to everyone who wants them and I am not asked about this. If there were any indicators that would give the force of law to the opinion both of the manager and of the active majority it would be another matter. Then even a simple remark would have a moral effect."

"But the competition! You mean you do not have personal creative plans?"

"But who adopts a creative plan? The engineer himself. But what kind of 'creator' is it, if I may say so, who works only within certain limits, and enters this in his plan? Moreover, even the plan that has the most content reflects only one aspect of the work, the part planned by the engineer himself. How does one evaluate, for example, the quality of the work or the creative approach to the matter? There is no unified indicator to characterize all of the work. In competition the worker has a basis: the fulfillment of the norm. But to base the incentives for engineers on the personal creative plan is a questionable proposition, and there are many conventionalities in the competition for these plans. But the main thing is that first it is necessary to have indicators, to account for them, and then to compare them."

"Possibly they have already tried to account for the labor of the engineer somewhere?"

As participants in the dialogue we frequently encountered the problem of evaluating the quality of the labor of the engineer. "Leveling" in evaluation

and, correspondingly, in material and moral incentives for the specialists that have the same education but not the same degree of conscientiousness, efficiency and creative capabilities produces negative consequences for the entire collective. In the final analysis it leads to a decline in the prestige of engineering labor, low earnings for the rank-and-file engineer, reduced initative and a less creative attitude toward the matter. The effectiveness of socialist competition decreases.

How does one eliminate these shortcomings?

We found an answer for ourselves in the brochure of the Znaniye society which contains experience in stimulating the creative activity of specialists which was presented in 1977 at the All-Union Exhibition of the Achievements of the USSR National Economy.* The proposed system of accounting for the quality of the work made it possible to provide moral and material incentives for talented engineers, and to eliminate the equalization of the payments of skilled, energetic engineers and idlers. Is it not these latter who cause the decline in the prestige of the name of the engineer?

The experience that was described seemed acceptable for our ASU division, which employes about 100 engineering and technical personnel. We suggested introducing the system in the division. True, the attempt to involve our colleagues in it did not turn out to be completely successful. Only after heated arguments was it decided to begin accounting for engineering labor as the first stage in the entire system for stimulating creative activity.

The underlying basis of the system of accounting is simple: each specialist has a "personal journal" which contains a table that accounts for the indicators. The quality of work is registered in the table with points. During the month the coefficients are calculated and evaluated with a general point. But the content part of the accounting is the determination of the indicators that reflect the diversity of engineering labor, and their evaluation did not turn out to be a simple matter. It was necessary to consider the entire complex of social problems of the enterprise.

The recommendations concerning the method went through fundamental development. They began with the preparation of the "Provisions for the System of Evaluating the Quality of Labor of Engineering and Technical Personnel." These determined the requirements for the specialist who claims the right to consider his work high-quality: "High quality presupposes above all a thorough mastery of professional knowledge and efficient performance of job duties, which are manifested directly in economical utilization of working time, a creative attitude toward labor, efficient organization of it, and active participation in the social life of the collective."

The requirements were concretized in the "Journal for Accounting for the Quality of Labor" and were described by a special list which included 20 indicators. Among them were points that reflect the promptness and quality of

*Lapshin, N. P., Makhatayev, M. Ye., "Stimulation ofthe Creative Activity of Specialists," Moscow, "Znaniye," 1977 (Series NOVOYE V ZHIZNI, NAUKE, TEKHNIKE, No 10).

the performance of work, the observance of discipline, and the fulfillment of job instructions and personal creative plans. The fulfillment of the creative plan in the "Journal for Accounting for Quality" is characterized by one point, but in the "Provisions" special attention is devoted to planning creativity, that is, the content of the plans. The creative plan indicates the positions of the personal production plan; the introduction of new technical equipment, efficiency work and inventions; measures for improving production and labor organization, the search for technical and economic information and its utilization, increased qualifications, publicity for scientific-technical and economic knowledge; social work, and so forth. The failure to fulfill the creative plan is reflected by one of the indicators of the "Journal."

On the whole the indicators were selected in such a way as to take into account all possible improvements in the performance and quality of labor, in other words, the system "works" from deviations. For example, the failure to fulfill one of the points of the plan, which does not entail an interruption of other work, reduces the initial 100 points by 5. If the failure to fulfill the planned assignment has led to an interruption of other work, 25 points are taken away. Unsatisfactory documentation of the work that is performed subtracts 5 points; late, poor-quality fulfillment ofinstructions or orders--20 points; unsatisfactory condition of the working position--5 points; violation of the established work schedule (delay, premature maintenance)--5 points off for each case. The overall sum of points of reduction is subtracted from 100. What remains after the subtraction is evaluated as "excellent," "good" and "satisfactory"; an excellent evaluation is given if the engineer has no less than 95 points, "good"--75 points, and "satisfactory"--70 points.

The preparation for the introduction of the system for evaluating the quality of labor began with a study of the experience presented at the All-Union Exhibition of the Achievements of the USSR National Economy. This system, which was developed taking into account the specific features of our enterprise, was included in a program for economic training of engineers and studies with trade-union activists and managers of structural subdivisions. The collective was given a frank explanation of the reasons that motivated organizing the accounting for engineering labor and the prospects for applying the evaluations when organizing moral and material incentives. It was suggested that the people discuss the question of the comparability of the results of their work. During the course of the discussion certain peculiarities became clear: the engineers took a businesslike, interested and principled attitude toward the introduction, but the managers whose subdivisions the system was to help objectively evaluate the labor of subordinates were excessively skeptical. The trade-union committee remained neutral.

After a half year of preparatory work we began the introduction itself. It turned out to be easier to begin and more difficult to continue what was started. And here it was especially important to motivate the manager and to have his business support and confidence in the usefulness of the experiment. Then it took about 2 years to "attach" the developed indicators to our conditons: we agreed with some things, rejected others, and adjusted still others. There were many disputes. Step by step the system became a reality, and the critique of the work of engineers from the "Journal for Accounting for Quality"

has become a customary phenomenon. Nobody is indifferent at the meetings: the collective gives the valuation with mandatory participation in this conversation of the person who is being judged. The "Journal" is becoming visual evidence of the experience, efficiency and attitude toward business. A filled-in page of the Journal is shown in Table 1.

In keeping with the evaluation that is received, the "Provisions" envision a system of measures for moral incentives. Material incentives for the engineer also depend on the indicators of the "Journal." The total points can be used when certifying an engineer or increasing his salary.

". . . In spite of the careful preparatory work in the process of introduction, unforeseen situations arose. For example, one of the engineers, desiring to demonstrate the unacceptability of the system, shows a page in the "Journal." It is a sad picture. Almost every line is dated, and the points have been reduced for all indicators. On the whole more than 100 negative points were accumulated, that is, the total sum 'went off the scale' of admissible values. And what conclusion can be drawn here? 'Probably, this "specialist" should be fired now. Whose journal is this?' The person who has come in is flustered, remains silent, and then admits: 'Mine.' After venting his passions he finally comes to a desire to think in detail about the process of summing up the results. When the reasons for the 'breakdown' of the system were figured out it became clear that one and the same failure was repeatedly included in various points of the "Journal." It turned out that the specialist had failed to fulfill a point of the plan and this had led to a complaint about the work of the subdivision. When registering the inadequate work in the "Journal" his overall number of points was reduced simultaneously for Lines 2, 4 and 6. Such "excessive demandingness" appeared in other of his inadequate jobs. All this distorted the principles of the organization of the system for accounting for the quality of labor."

Usually the systems for evaluating the quality of labor are arranged on the principle of increasing points. For example, if a specialist submits reports in time 20 points are added to the initial figure, if he uses foreign literature in his work--another 20 points, and so forth. It seems to us that a more effective approach to evaluating the labor of the engineer is by using deviations on the negative side according to the following principles. Judging the positive characteristics gives one a feeling of well-being, one does not wish to recall shortcomings, and sometimes this can seem inappropriate. In order to make the judgment businesslike and concrete, one should concentrate on the main thing: what has impeded the work? If there have been no deviations in the work there is no reason to reduce the points. The engineer receives an evaluation of "excellent." But his labor is a search, and on this path self-critical evaluation of his work and businesslike demandingness of comrades are especially important. It is precisely these considerations that caused us to select a system of subtracting points.

The individual critique of the work of the engineer for the past month is the main part of the implementation of the system. This critique has replaced for us the traditional meetings with the keeping of minutes, and we have managed to transform it into a new kind of work discussion. This discussion has become

Table 1. Results of Evaluation of Engineers' Labor

| Evaluated indicator | Subtracted Points | Subtraction of points for periods | | | | | |
|---|---|---|---|---|---|---|---|
| | | 1st quarter | | | 2d quarter | | |
| | | Jan. | Feb. | March | April | May | June |
| 1. Failure to fulfill point of plan that has not entailed interruption of others' work. | 5 | -- | 5 | -- | -- | -- | -- |
| 2. Failure to fulfill point of plan that has entailed interruption of others' work (by the fault of the worker). | 25 | -- | -- | -- | -- | -- | -- |
| 3. Existence of principal mistakes. | 30 | -- | -- | -- | -- | -- | -- |
| 4. Unsatisfactory quality of work. | 20 | -- | 20 | -- | 20 | -- | -- |
| 6. Tardy execution of orders, complaints about work. | 15 | 15 | -- | -- | -- | -- | -- |
| 11. Violation of protection of labor and rules of technical safety. | From 5 to 25 | -- | 5 | -- | -- | -- | -- |
| 18. Failure to fulfill "Personal Creative Plan." | From 5 to 15 | -- | -- | -- | -- | -- | 10 |
| 20. Failure to fulfill individual plan for technical and economic training. | 10 | -- | -- | -- | -- | 10 | -- |
| Total | | 15 | 30 | -- | 20 | 10 | 10 |
| Sum of points received from results of labor. | | 85 | 70 | 100 | 80 | 90 | 90 |
| Evaluation of quality of labor. | | good | sat. | exc. | good | good | good |
| Date of meeting, No of protocol | | | | | | | |

more important for the collective than the subsequent penalties. The strongest moral influence on the individual has turned out to be the process of evaluating his labor. The judgment takes place in a business conversation: the indicators are discussed from the table of the "Journal." When there is any violation or omission the arguments explaining the reason for it are weighed. At the basis of the evaluation, regardless of the explanations, is the fact of the violation (failure to perform a job), and points are taken away for this. But the arguments of both sides must be considered. Thus there is an analysis of the mistakes which can reveal the causes and consequences. The critique is the most important thing in implementing the system since it requires both adherence to principle and respect for the individual as well as accounting for the peculiarities of people's characters. But if it is especially important to meet the latter requirements in order to overcome the psychological barrier at the beginning of the introduction, fairness and adherence to principle are mandatory in all stages.

In the initial stage it is important for the manager to begin the discussion of the results of the work from his own point of view. In the first place, it does not hurt the manager to look at himself from the outside, and in the second place, his coworkers will help him to avoid mistakes and, in turn, become more demanding of himself. The overall business can only gain from this. A fair and unembellished critique of the activity of each individual gradually teaches a person how to look at himself through the eyes of his colleagues and the manager, and to take note of his own omissions and mistakes. Self-criticism and the ability to analyze causes and possible consequences of one's actions are developed. Such an attitude causes everyone to think: could the inadequate work become the reason for mistakes of a comrade? An honest, open attitude toward one's business forces those around him to respond in the same way. And if the workers have begun to discuss in a friendly way both their mutual complaints and their mutual inadequacies, one can consider that the goal has been achieved. Such a collective will be efficient and active.

The critique of the individual results of the work of each person has achieved the proper result since socialist competition in our division is not pro forma. Accounting for the personal contribution of engineering labor to the overall cause has a logical prerequisite for its effectiveness. Competition and accounting have merged into a unified system, strenthening and augmenting one another.

Special attention to the critique of the results of the work in the initial stage of introduction was necessary not only in order for the collective to become psychologically accustomed to accounting for labor. Shortcomings in the system are revealed at the meetings, and proposals are suggested for eliminating them. Amendments and additions are made to the procedure for evaluation.

". . . The trade union organization is given the "Journals" and "Personal Creative Plans" that are filled out by the workers and reviewed by the managers. The discussion begins and everyone feels that the procedure is 'misfiring.' There are no notes of shortcomings or violations in the 'Journal,' but the reason for this is certainly not the brilliant production successes of the

engineer being discussed. He is punctual and efficient, but his initiative is close to zero, creativity is unknown to him, and he rarely makes mistakes because he performs only monotonous routine procedures. The heavy silence of the colleagues is interrupted by the suggestion: 'Let us subtract points for the lack of creative initiative. And let this be appreciable.'"

No harm is caused to the system if it is "self-adjusting" not only in the beginning, but remains that way forever. Its viability only increases from this. During 3 years the content of the "Journal" has changed essentially, and two new sections have been added to it. One of them includes briefly formulated remarks from which the coefficients are subsequently reduced. Another section contains a list of jobs performed by the engineer that are included either among the creative or the above-planned jobs (see Tables 2 and 3).

Table 2. Page of Indicators for Subtraction of Points

| Date | Remarks about reason for subtraction | Points |
|---|---|---|
| 7/5/81 | Tardy presentation of work plan for introduction of the problem "Tekhuchet" | 8 |
| 6/6/81 | Negligent fulfillment of "Instruction on Transfer of Information" | 5 |
| 8/7/81 | Delayed submission of information on the correction of "Information" | 11 |
| 5/8/81 | Unsatisfactory condition of working position | 12 |

Table 3. Report on Creativity and Above-Plan Work

| Date | Content of Work |
|---|---|
| 1981 - 1st quarter | Conducted an analysis of input and output documents of the problem "Tekhuchet." Developed figures of corrections for the association. |
| 2d quarter | Developed and introduced journals for registering the stages of the processing of input information.<br><br>Held classes in other sectors of the division on the problem being introduced. |

The first part of the "Journal"--"the list of indicators of reduction"--is filled out by the engineer after a decision to introduce the coefficient into the table of indicators, and the second--"Report on Creativity"--before the critique. The report is signed by the manager of the subdivision.

Gradually the nature of the discussion at the meetings for summing up results has changed somewhat. People have come to be less offended by the remarks and to analyze more the primary causes for the mistakes and omissions. But all the critiques proceed in different ways although, it seems, almost all the possible situations have been taken into account.

". . . it is a regular meeting, and the critique of the next journal suddenly comes to a standstill. The total evaluation in the table of indicators is unfair to the engineer. On the one hand there is a report of serious creative work, and on the other--remarks that reduce the evaluation by 40 points. Of these 20 are for failure to carry out the instructions of the manager and 20 for failure to fulfill one of the points of the plan. Everyone knows of the efficiency of this comrade, his friendly readiness to help everyone, and his ability to approach a matter creatively. But it is still unclear what should happen in this situation. Someone jokes: 'Why make the note in the table? We have a poor memory, and we would not remember.' But a joke is a joke, and practice shows: 'to forget' certain errors in work is not acceptable and there is no point in it. A questioning glance at the manager. This situation is not a simple one for him: in haste he gave an instruction to the worker who had the heaviest load at the moment and this was the reason for his failure to fulfill the assignment on time. The laws of justice are implacable. After a pause the manager said: 'This was my mistake. It is necessary to remove the work failure from his journal and enter it in mine. Point 8.' It was not easy for the senior in age and position to utter this sentence, but demandingness on others begins with demandingness on oneself. Perhaps the system would accept no other approach. Any other approach would be pointless.

". . . The discussion of the work of an engineer who has not previously been distinguished by a desire for creativity shows progress this time. In past months after the introduction into the 'Journal' of the section on creativity, he has begun to display a certain amount of initiative. And although the manager of the group has remarks, he senses a different mood than he did previously."

An appreciable result from the introduction of accounting for the quality of engineering labor is achieved not only by the entire collective, but also by the manager. Initially the introduction of the system took away some of his working time. After the people became accustomed to the fact that with mistakes on the part of the entire collective the complaints are not general, but must relate to a particular guilty party, the system began to produce a return. Initially the accounting only registered mistakes and it was not necessary to eliminate them. With critiques it becomes clear that the engineer simply did not take into account the remarks that were made promptly. After several of these critiques and a reduction of the points, the recommendations of the manager gradually are carried out without too many reminders. Moreover, the colleagues also try to prompt and help one another. Each worker only recalls his own concerns when intervention on the part of the manager is necessary. In the majority of cases the engineer acts independently, feeling responsibility and a sense of his role in solving the common problems. Self-administration begins, and the manager begins to have more time for creative and long-range matters.

We did not come by the system easily. Not everyone actually recognized its advantages. Gradually the number of subdivisions in our division where it was functioning decreased. The accounting remained only in places where there were enthusiasts who stood at the sources of the introduction.

The "illegitimate origin" of the system remained a serious argument for some managers, which made it impossible for them to implement it creatively and "attach" it to the specific features of their subdivision. In some places the "Journals of Accounting" are kept perfunctorily, and people most frequently try to forget about the system. There are two main reasons here: first, the solution to the problem of accounting for engineering labor up to this day is a private initiative, and therefore the managers who have been skeptical about it since the very beginning maintain this opinion, the more so since they do not want to increase the demands they make on themselves. Moreover, the system requires evaluation of the worker not for his obliging nature, but for labor, efficiency and quality, which largely depends on the manager. Second, "independent activity" in the organization of the accounting for engineering labor does not make it possible to strengthen the system in practice, that is, to change over to the introduction of a complex of measures for moral incentives and material stimulation, and to utilizing evaluation when certifying engineers.

During the process of introduction we have seen not only the interconnection between the system and socialist competition, but also the overall dependency on the interrelations in the collective. The introduction of the accounting requires not only persistence, but also a packed full, cautious approach. There remains the hope that the system of accounting for engineering labor will be officially recognized.



11772
CSO: 1820/169

RESPONSES TO ARTICLE ON DYNAMIC FEEDBACK PUBLISHED

Novosibirsk EKO: EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA in Russian No 7, Jul 83 (signed to press 2 June 1983) pp 143-162

## Five Questions About the "System With Feedback"

/Article by G. Kh. Popov, doctor of economic sciences, professor, Moscow State University imeni M. V. Lomonosov. For referent article see JPRS 82810, 7 February 1983, No 1039 of this series, pp 91-100/

/Text/ The ideas in the article by A. Avakyan "Feedback," at first glance are logical, simple and they constitute a system. I shall remind you of them.

Once every 2 or 3 years at each enterprise and in each organization a competition is declared for the best plan. Each plan shows what the author would do if he were promoted to a management post. Which post in particular is determined by the content of the plan. Anyone who wishes may participate in the competition, but it is mandatory for managers of all levels.

The expert evaluations of the strategy that has been developed would make it possible to obtain one of the objective evaluations of the degree to which the manager corresponds to his post. It is necessary to have specialized expert consultation organizations that are independent of the ministries and departments both organizationally and materially.

The certification is augmented by competitions of plans and is completed by the inclusion of the selected candidates in the reserve. As for particularly administrative advancement or replacement of personnel, the competitions give certain objective criteria which should not be ignored when making tough decisions.

### The First Question: What is the Main Thing in a Manager?

The plan of the strategy, in the opinion of A. Avakyan, shows the qualifications of the author of this plan in one area of administration or another, characterizes him as a specialist or scientist, and demonstrates his ability to reveal a problem, analyze it and propose a variant for solving it. But are these qualities enough to say that the author of the plan can be a manager? For what is the main thing in a manager? Is it really the ability to create a plan?

There is no simple answer to this question in the article. First the author writes about the fact that the manager should have party spirit, competence and so forth, and then he becomes more precise: "Simply speaking, the manager must have talent, will and broad culture." But the author does not stop here, and we read further: "From the mass of differences between a good and a bad administrator, let us note the following: the good one subordinates all of his decisions to the strategy." True, he immediately augments this: "It is necessary to begin with a test of the volitional, intellectual and communications capabilities." And so A. Avakyan thinks that a manager should meet the most varied requirements. But according to the logic of feedback, the most important indicator is his ability to create a strategy.

But we have a right to demand the development of a strategy from the planning specialist and, in a broad sense, from the planning agencies. The manager needs not the ability to develop a strategy personally, but the ability to organize the work of the services for developing strategies. In the former case we are speaking about a knowledge of what needs to be done, and in the latter--about the ability to manage.

The science of administration began as a science when it was proved that a knowledgeable person is an excellent figure, but it is still not known whether he can be made into a manager. Therefore a diploma certifying knowledge--a VUZ dipoloma or one of a candidate of sciences--still does not give him the right to be a manager. This is a special profession. Here one needs primarily not so much knowledge as other qualities. Which ones? V. I. Lenin writes: "In order to manage, it is necessary to know the business and be an excellent administrator."* We have known so many knowledgeable specialists who are able to create fairly good strategy plans in one area or another, but are incapable of organizing the work even of a couple of people!

To judge the capability to manage only from the quality of the plan is the same thing as considering the author of the song the best singer, or considering the best trainer in running to be an excellent long-distance runner.

Our outstanding theoretician in organization, A. K. Gastev, wrote: "By the will of destiny Russia has accumulated a fairly large contingent of knowledgeable people, but at the same time they are lacking any practical skills in organizational matters." Concerning them Aleksey Kapitonovich noted: "One who is knowledgeable, but not capable is a machine without an engine."

A plan cannot become the basis even for appointment to the reserve. The fact is that when forming the reserve it is necessary to be guided by the same principles as when making promotions to a position. Otherwise the world of the reserve will live separately from the world of appointments.

The winners of competitions can, of course, end up to be administrators as well. But in many cases they will have precisely those qualities which are evaluated in the competition, that is, they will be good specialists in their areas.

*Lenin, V. I. "Poln. sobr. soch." /Collected Works/, Vol 40, p 292.

The Second Question: What Role is Played by the Competition of Plans?

According to the first idea of A. Avakyan, "competition of plans--post," the winners of the competition are included in the reserve on paper since they cannot immediately realize their plan. Here the plan is precisely a means of feedback. A candidate is selected according to it, the plan is realized, and the course of the implementation is strictly followed. But at the end of the article another thesis is proclaimed: the competition is only one of the factors for promotion into the reserve.

From the first idea the following questions arise. Who approves the plan? According to the author's logic, the selection of the winner means an automatic approval of the plan. But then instead of a unified plan of the national economy there is a group of plans that have won in various competitive campaigns. And if one proceeds from the fact that after approval the plans are reduced to a common plan, in the end what remains of the winner's plan might be something for which its creator does not want to be responsible. Therefore the idea "competition of plans--post" leads to a contradictory situation. The apparent logic of feedback disappears.

The frequency of the competitions is not clear in the idea of "competition--post" either: every 2 or 3 years. Should the plans be consolidated this frequently, should personnel be moved, and should the basis of the economic cycle be 2 years? So much has been written about the need to strengthen the long-range nature in work with personnel! And here a person has just begun to work and he already has to prepare a new plan for a new competition.

Now let us consider the second idea at which the author arrived at the end of the article: the plan will serve only as one of the factors when selecting the reserve (the varient "competition--reserve"). Here again there arises the question of the frequency of the competitions, but on a different plane. What will happen to those who have been included in the reserve if by the beginning of another competition they have not been appointed to posts? Are they automatically excluded from the reserve or must they draw up a new plan along with the new candidates for the position? And if they are not excluded, what is the point in evaluating the best plan of a given competition if the reserve already has winners of preceding competitions?

Having a candidate in reserve inevitably leads to obsolescence both of the situation in the business and of the criteria for evaluation and of the plan itself. It cannot be ruled out that by the time the author of the plan receives his post he himself will no longer want to implement the plan.

In the variant "competition--reserve" the plan cannot be an instrument of control over the candidate. He will be a means of feedback only if the author of the best plan immediately (or through gradual introduction into the position) occupies a post and begins to carry out the plan.

And so either the competition of plans requires a change in the personnel system--then it will inevitably be necessary to have a new system of administration--or the competition of plans will serve only as a factor for enlisting people in the reserve--then there will be no "plan--manager" feedback.

Now let us discuss the role that is played by the plan in the selection. A. Avakyan has contradictory ideas regarding this most fundamental issue. First the evaluation is a decisive conclusion in favor of the candidate, and then this evaluation is only one of the factors which "cannot be simply ignored when making tough decisions."

What does it mean--"one must not ignore"? Taking into account the evaluation of the plan among other factors? And if the person who is to take into account the results of the competition pays attention to them, but still promotes his own candidate? The appointment can never have anything to do with the winner of a competition, even one who has been included in the reserve. But if "one must not ignore" means "one is obliged to select the author of the best plan" then the actual appointment will be done by the firm that evaluates the plan. In this case of course the existing system of advancing personnel will basically remain unchanged. For example, how many representatives of this firm will be part of the commission for certification and which rights will they have" a decisive vote, the right to veto or will they simply be among the participants in the voting? Although the "procedural" questions contain principle aspects--will the selection actually proceed according to the evaluations of plans--the article does not even raise them.

The Third Question: What Does the Plan Tell?

In the opinion of A. Avakyan, the plan shows the ability to be a manager. This is clear to the author. He is bothered only by the way to evaluate the plan objectively.

What can be included in the plans submitted to the competition "by all hopeful"? If this were a competition of a painting, a song, a shotput or any other thing that allows individual execution, everything would be simple. But if we declare a competition for a spaceship, the situation immediately changes. The task is not within the power of one person, and the situation will be quite different if the plan involves a part of a unified system--the economy. The author of the article apparently understands this. He writes: "According to the logic of things, these documents should be the plans." Undoubtedly, the strategy projects should be plans. Moreover, the practice of planning has been developing for decades, envisioning collective activity of many workers and agencies. But the author, instead of thinking of how to improve the already existing instrument of administration, the plans, suggests individual projects.

While being familiar with the course and diploma work of students of institutes for increasing qualifications and the Academy of the National Economy, I turned my attention to two sharply differing variants. The first is a project for improvements that is substantiated by calculations. All services of the organization where the author of the project works participated in the creation of this. The second involved personal ideas and it had no figures, diagrams and so forth. It is clear that it is difficult to compete using such projects.

The individual plan will be close to the problems of the long-range plan only if it is drawn up with the participation of the manager and all services of the enterprise, the planning institutes, the design bureaus and so forth. But if

the authors of the plan use neither other workers, nor normatives, nor statistical data, nor electronic computers, their brainchild will remain at the level of general considerations at best.

We are again faced with the irresolvable contradition between the system and feedback. The candidate for a management position cannot individually create the best plan which corresponds to this intention.

The Fourth Question: About the Objectivity of the Evaluation

The evaluation of the plan plays a special role in the system of feedback. The author took away from all existing ministries and departments the right to objectively evaluate the plans that are submitted to the competition by "all hopefuls." He thinks that in the desert of unobjective agencies, consultation firms will be those oases in which the plans are objectively evaluated. True, A. Avakyan also assigned these firms to one of the existing departments--the USSR State Committee for Science and Technology. Why to it, and not to the Gosplan, which is responsible not for one aspect of management, but for the overall strategy which one expects to see in the plans remains unclear.

But in general are independent firms possible? In a school essay the 17-year-old Karl Marx wrote: ". . . Our relations in society begin to take form to a certain degree even before we are in a condition to exert a decisive influence on them."* I always recall this essay of Marx's when I hear about independent firms, trade unions and so forth. It is impossible to be in a society and be free of the society. Independent firms are an illusion, even if one proceeds from the idea of feedback.

Why is an independent firm necessary in this case? In order to obtain an objective evaluation, that is, in the opinion of the author, one that is independent of departmental and local interests. An objective evaluation is consequently one that corresponds to nationwide interests. In other words, an objective approach is a synonym for a statewide approach. Such an evaluation can be produced not by an independent firm, but a firm that most fully reflects the radical interests of our system. And the stronger this dependency, the more fully the common interest is taken into account, and the more objective the firm is. This is what independent means if it is understood precisely as the path toward an objective evaluation.

Why will the firms proposed by A. Avakyan (even under the aegis of the USSR State Committee for Science and Technology) take a statewide approach? Just because they are included in the provisions? But the provisions about the ministries also include the requirement of an objective approach. Why does the ministry not meet this requirement while the firm will be able to meet the requirement included in the provisions? If one follows the theories of administration, it is necessary to find a mechanism for actually ensuring the protection of the nationwide interest. We have always been engaged in a search for a mechanism which would force administrative agencies to account more fully

*Marx, K., Engels, F., "Iz rannikh proizvedeniy" /From Early Works/, Moscow, 1956, p 4.

for the statewide interest. Economic science and practice utilize administrative and material levers, moral and social measures, incentive measures and punishments. But still this does not always produce the expected result.

It is not difficult to imagine what an independent firm might be by investigating the experience of interdepartmental questions for receiving various kinds of plans and projects. In these commissions only representatives of the consumers defend the best decisions and fight against shortcomings--and even this is not always the case (recall the receipt of incomplete buildings with the promise to eliminate the shortcomings after they are received). I too have participated in these commissions. What does an independent expert who represents the Academy of Sciences or VUZ think about? About making sure that the average level of the plan or project is tolerable. There is neither time nor forces nor possibilities of completely checking and discovering the best decisions. But the main thing is that there is no motivation for careful work. Indifference or, on the contrary, self-interest are the extremes. And the reference point for the "golden mean" is the rule in the behavior of independent experts in these commissions. Of course these are only personal impressions.

But one need not go especially deeply into the theory and come up with new examples from practice in order to understand that without incentives and responsibility the firms cannot be made to "show their hands." And if they do have some kind of motivation--material or moral--this interest will begin to affect their evaluation. The firms encounter the same difficulties as the Gosplan, the Gosstroy, the ministries and other agencies. The same factors that help or impede the ministries or departments from being objective, will also influence the firms. The creation of new agencies does not solve a single problem if it does not place them in a new position. And this is already the problem of the entire economic mechanism.

There is only one conclusion: one must search for ways of increasing the objectiveness of evaluations not in creating apparently independent agencies, but in improving the existing management mechanism. If an effective mechanism of administration is not formed, any new agency sooner or later will operate no more objectively than the other ones. The "oasis" cannot exist in the economic system.

The Fifth and Last Question: Why Have a "System With Feedback" for the Ministry?

As we recall, initially A. Avakyan denied that the ministries are capable of objectively evaluating a plan or a strategy. But soon it is precisely them (if one understands an administrative agency to be an existing system of agencies) who are given control over how precisely the manager who is appointed according to the results of the competition realizes this strategy. Thus he writes: "He (the manager--G.P.) must justify any deviation, and the administrative agency can subject any such justification to a board of experts."

This means that the ministry can objectively trace the implementation of the strategy and evaluate the correctness of the author's deviations from his own strategy. But what if the ministry thinks that the author has made a deviation but the author (the director) thinks that there are no deviations? Since A. Avakyan retains strict personal responsibility of the manager for the implementation of the entire strategy, does the ministry not remove the director for the deviations that are revealed, including those which the director does not consider to be deviations?

Here is a clear lack of logic: agencies which, in the opinion of A. Avakyan, are inclined toward a lack of objectivity check on the observance of this objectivity. The agency which can allow a lack of objectivity when evaluating a plan suddenly play a different role when evaluating the actions of the author of the plan. Will this agency not try to prove--if it is not in the stage of discussing the plan, but in the stage of its implementation--that it was necessary to bring the plan to it in the very beginning? I am inclined to think, when the world of management and administration is seen realistically, that during the course of this daily control sooner or later both plans and their authors who are unacceptable to the "controlling agency" will be weeded out. Here it is all a matter of time.

But A. Avakyan fails to note another contradiction : he wishes to have people assigned to a post because of knowledge and their plan, but they are to be controlled and removed for their ability to organize the implementation of the plan. The system with feedback even within itself has not retained a unified basis in personnel work.

Let us proceed further. Why does the ministry control the manager? It turns out that it wants to have the opportunity to intervene promptly. Well, this is a familiar motivation which is somewhat unexpected in an enterprise worker. This is not a new idea, it has proponents even today. True, all decisions regarding management issues, beginning with the decree of the September (1965) Plenum of the CPSU Central Committee right up to the instructions in the speech by Yu. V. Andropov at the November (1982) Plenum of the Party Central Committee are concerned about the same thing--increasing independence. But in the end the author, like anyone else, has the right to see all the problems precisely in the inadequacy of "prompt intervention" particularly "operational."

Certain ideas presented in the article about feedback reminded me of a book I edited, "Evaluation of Administrative Personnel."* In the chapter devoted to describing the experience of capitalist countries in the area of evaluating personnel, these varients of evaluation were singled out: directly by one of the higher managers; by the personnel service; by an outside organization--consulting firm, business school and so forth, and, finally, by specially created agencies (services) for evaluation--centers, committees or commissions.

*"Otsenka kadrov upravleniya" [Evaluation of Administrative Personnel], Moscow, "Moskovskiy rabochiy", 1976.

Then it was noted that ". . . The sad experience of mistakes in selecting personnel have forced capitalist firms, especially small and medium-sized ones, to trust less and less to their own discretion and turn more frequently to places where modern methods, knowledge and a large amount of experience in evaluating personnel are concentrated--consulting firms.

"It says in the book that the fourth group of methods used for revealing qualities is comprised of devices whereby the person who is being inspected is in one form or another placed in the proposed position not in a business game, but in practice or as someone on probation, or during a period when the permanent worker is on vacation. The candidate is told to draw up a plan or a program which should reflect his point of view concerning the most effective methods of organizing and performing his future work. The program is reproduced in 5 copies and given to each member of the evaluation center for study. Then the program is approved and evaluated through the real actions of the candidate during the course of the probationary period."

In my opinion, this quotation correctly defines the role of the plan, the outside firm and the testing of the plan. In the primary position is the testing not of the plan, but precisely of its implementation. And this is no accident. The implementation reveals more fully the capabilities for organization and management. Candidates for management have already been selected according to the basic principles for selection that have been adopted. And among the additional methods is the evaluation of the ability to implement the plan. Moreover, the subject of the plan pertains precisely to that work or position for which the candidates are recognized as suitable in terms of their basic characteristics. The plans of the already selected candidates are evaluated and then approved.

Now about the firms. I was at a congress of these firms in Copenhagen. These were not agencies that make decisions, but agencies that give advice, consulting agencies in the direct sense of the word. The client can listen or not listen to the consultant. He can turn to a firm or he can make the decision himself.

Attention is drawn to the imprecise aspects of A. Avakyan's presentation of the existing practice of certification. Thus he writes: "Managers of enterprises and associations undergo certification, but in commissions that are appointed by the ministries and departments." The basic peculiarity of the official certification in our country consists in that it pertains only to specialists and lower (so-called unregistered) managers. The basic category of managers (of the middle and higher level) are not certified. Like many scientists and specialists, I have repeatedly suggested introducing certification for all economic personnel (as is the case in a number of socialist countries). The present situation is not normal. But it is a fact.

A. Avakyan writes: "Just as with the existing policy, the first level of the commission of the competition should be formed from highly qualified specialists with the participation of representatives of the trade organization under the aegis of party committees; the distinction lies in the fact that it is suggested that it be formed in conjunction with specialists of an independent expert consulting firm." Here is another imprecision. In the existing commission for

certification the primary role is played not by specialists, but by the administration. The author initially recalls this minor point (the dialogue between the director and the person being certified), but then forgets about it.

One can also recall the author's mistakes in logic when proving his points. While A. Avakyan thinks that at certain enterprises there are shortcomings in the system for promoting personnel, he immediately draws the conclusion that everyone needs a new system. If the ministries and departments cannot always correctly evaluate the plans of the strategy of the lower units, these organizations must be relieved of one of the most important functions of administration once and for all.

The more deeply one looks into the "system with feedback," the more one feels that it is lacking precisely a systematic nature.

## And If There Were No Skepticism

/Article by A. K. Semenov, division chief of the Slantsekhim Production Association (Kokhtla-Yarve)/

/Text/ Although one cannot agree with all of A. Avakyan's points, one must recognize that his article raises important problems related to the selection and training of management workers. It is even more important what with the new and higher level of development of our society that each new height of technical progress requires further improvement of administration.

In the statements at the "round table" in Novosibirsk and in the responses of the director of the Signal plant, N. T. Bordyugov and the Krasnoye Sormovo plant, N. Ye. Leonov, the author of "Feedback" was reproached for the fact that he took advantage of existing undesirable situations in the practice of certification and advancement of management workers of the lower and middle levels. But we could also name some managers who are generally fairly good who, having a large amount of administrative experience have inspired so much confidence in their irreproachable authority and job power that there is not even any thought that there might be shortcomings in their work. If there is a plan everything else will work out. This approach is very vital: the plan at any cost! Is this not where the condition of stagnation begins? Is this not where one finds the lack of desire to search for new approaches and methods of administration? The author has caused us to think about the need for new and better criteria for selecting and advancing management personnel. Herein lies the benefit of his article.

Who stands to lose if we were to add to the manager's ability to get things done the dispassionate quality of knowledge? It is precisely these variables that are placed at the basis of the new and higher requirement for selecting a manager.

If instead of preserving the essence of A. Avakyan's idea--raising the requirements for administration to a new level--we engage in verbal tightrope walking, we can see many weak points in the positions of the author of "Feedback": the

imprecision of certain definitions, contradictions and so forth. But after all search means doubt, lack of definition and, along with this, the motive force of thought. And even if he were a genius the author could not solve all the difficult problems of administration in one fell swoop!

And it is quite predictable that A. Avakyan's statements elicited a multitude of various judgments. This means that the goal was achieved--a solution is being sought for the problem.

I was impressed by the idea of anonymous competition which A. Avakyan suggested, even though it is not new. It places the competitors in equal conditions. And the one who is the most talented, experienced, courageous and qualified, whose plan is most progressive, realistic and economical in practice, who is most worthy of being included in the reserve for advancement--this is a matter for a competent jury. It is obviously not forbidden for the manager himself to participate in the competition in order to conform his leadership.

Talent and intelligence can be manifested only in action. The competitive system of training and selecting production organizers is increasingly winning its right to exist in the minds of practical workers.

And the last thing. One can obviously not agree with those statements at the "round table" in Novosibirsk which placed an equal sign between plans that are of a global nature for a given enterprise or association and developments that are carried out by managers and specialists in courses for increasing qualifications. It is known that frequently outlines are perfunctory in nature, are a recognition of the training program and serve as a report for training hours, and have little or no application in life.

Under the conditions of operating industries I understand the essence of the plans proposed by Avakyan as an attempt to resolve more efficiently the local problems existing at enterprises for the near future, as the development and implementation through their own forces of measures which would rapidly and most efficiently lead to an actual growth of production, and improvement of technology and quality without impinging on planning parameters.

We understand that the author of the article, "Feedback" is not in favor of the formal, but of the motive force of the plan. Why not conduct an experiment, supplementing the certification with a competition of plans? Nothing determines the value of an idea as well as practice!

## The Manager: Job or Profession?

/Article by R. G. Galeyev, chief of the Al'met'yevneft' Petroleum and Gas Administration, and A. S. Sheshnev, candidate of technical sciences, chief of the TsNIPR administration (Al'met'yevsk)/

/Text/ It is well known that weak knowledge on the part of managers in the areas of organization, social psychology, technical equipment and the technology for adopting and implementing decisions, law and so forth impede the introduction of advanced labor methods and new technology and constitute one of the

sources for poor executive discipline and labor turnover, and therefore the problem raised by the magazine concerning the training of production managers is extremely crucial.

In order to make the discussion more specific let us clarify the kind of managers we have in mind: those for whom the main things are problems of technical equipment and technology, and only then economics and organization, or manager-organizers, for whom the most important things are the social and economic aspects of administration. These are the ones who were discussed in the article by A. Avakyan and in other materials in the magazine. Both types of managers are needed in public production. Technical managers are head engineers and head specialists who are in charge of technical and technological services, and organizers are managers of enterprises, associations, shops and so forth.

The situation has developed historically in such a way that most of the production managers have a basic technical and technological education. The necessary priority of the technical policy over the social one in the early stages of the emergence of our industry assigned leading roles in the area of administration of specialists with a technical education. And the concept of "manager" was regarded exclusively as a job which could be held by people with the most varied professional training, if only it corresponded more or less to the profile of the production activity.

Wherein lie the shortcomings of technical and technological training for manager-organizers?

First, in the fact that it largely predetermines the way of thinking of the manager. The technocratic approach to solving socio-economic problems leads to a certain distortion of socio-economic goals, sometimes even to ignoring them. It is no accident that managers of enterprises in their work frequently prefer operational technical and technological control over social control, play the role of head engineers, and engage in the trivial work of technical specialists. It is indicative that only in recent years have they begun to take varying amounts of interest in plans for social development.

Second, the lack of a professional education in administration leads to inadequate competence of managers regarding many socio-economic problems and in the utilization of the most important factor in production--the human factor. As research shows, a good half of the problems which production collectives have to deal with originate with mistakes and omissions that are related to the inadequate competence of managers of various ranks when it comes to problems of social administration.

Administration should be a profession, and specialists should be trained for it. But the process of professionalization should not be transformed into a regular campaign for hasty retraining of managers at regular semimars, courses and so forth, which produce very little. We understand it as a relatively lengthy process. It is necessary to have a program which, taking into account the advanced domestic and foreign experience, includes a serious investigatory development of the entire complex of key issues related to determining the

object of labor of the manager-organizer, detailed development of the technology of the process of administration, the procedure for training and retraining, and related to the serious changes in the system of selecting and placing personnel, and so forth.

Today, figuratively speaking, we have ended up to be dependent to a certain degree on the qualities of the automobile of organizational administration, whose steering wheel is turned in the technical and technological direction. And this is not the best way of moving forward.

## Technology of Appointment--A Scientific Approach

/Article by V. Sh. Rapoport, chief of division for administrative procedures of KaMAZ (Brezhnev)/

/Text/ Examination for Position

Because of the nature of my activity I have had occasion to deal with hundreds of managers of all ranks--from foremen and bureau chiefs to head specialists and directors. Unfortunately, it is revealed too frequently that they do not know administrative procedures, which they should know as well as they know safety techniques.

But everyone is obliged to take an examination in safety techniques before he goes to work, but nothing like this is required for the techniques and technology of administratio n. All this is mastered by the method of "on the job training." And so there appears the trainee-foreman, the trainee-shop chief and, worst of all, the trainee-director. Moreover, if a welding trainee, after the completion of his training period takes an examination, this is not required of a director trainee. I know directors who could be removed even after half a year because of their inability to ma ster administrative methods, but they are kept on for 3-5 years, until it is quite obvious that they have failed.

Of course a manager must be erudite in more than the areas of the systems and procedures of administration. He must also have a whole range of specific capabilities plus moral qualities. But first of all he must know his object and master mo dern administrative methods.

And so it is not simply a competition of strategies, as A. Avakyan suggests, but also an examination for the position--this, in my opinion, is what is necessary! For all managers--from the foremen to the director.

Such examinations are nothing new, they are being used in a number of countries. But serious preparation is necessary in order to introduce them. How is this done? First of all it is necessary to have a clear-cut methodology for the examinations, for otherwise they will include those shortcomings in certification which A. Avakyan justifiably wrote about. The science of administration has developed theoretical fundamentals of such a methodology. In keeping with these, it is necessary to draw up models of the main administrative positions.

Such a model should determine:

about what (th at is, about which elements of the administrative system) the manager should know;

what he should know about these elements;

what should be the depth of his knowledge.

For example, for the chief of a machine building shop these elements are: workers, equipment, fittings, instruments, materials, objects of labor, higher managers, clients (consumers), related workers, technological methods, organizational methods, and so ofrth.

While the shop chief must know the maximum possible about people--the fundamentals of industrial sociology, labor legislation, ergonomics, factors in illness, and so forth, with respect to equipment there is no need for this--he has an assistant in the shop.

Competition of Strategists

The examination does not replace the competition of strategic plans proposed by A. Avakyan. This idea deserves the most attentive consideration. For if an examination reveals the necessary erudition, a plan of strategy reveals particular capabilities that are extremely important for many positions, expecially top managers.

And so we would have examinations plus a defense of the plan of strategy. But how would this be carried out, who would be the judges? And is there analogous experience in the country? It turns out that there is. This is the system for awarding scholarly degrees. With all the repeatedly discussed shortcomings, it largely satisfies the necessary requirements. Specialized councils for awarding scholarly degrees consist of recognized specialists. The defense of dissertations and the submission of candidates' examinations take place not necessarily at the place where the candidate for the degree, and so forth, is working. There arises the idea of creating such councils of "examiners" in the system of institutes for increasing qualifications, enlisting specialists who have recommended themselves and scientists from other enterprises and institutions of the country.

Servants of Three Masters

A. Avakyan justifiably raises a number of extremely crucial questions which are timely--about the responsibility of those who make the appointments, and about the lack of a system that promptly reveals the unsuitability of managers. Let us try to approach these problems not emotionally, as the author of the article being discussed has done, but from the standpoint of the science of administration.

According to the scientific definition, the manager is a member of two collectives at the same time--of the one of which he is in charge, and of the one of which he is a subordinate. And the director, moreover, is also a member of the

collective of managers of the city (rayon, oblast). Each of these collectives makes requirements on the director (as sociologists say, role expectations), which are frequently contradictory, and woe to the manager who does not justify them. The drama and complexity of management work consists in this "borderline" position.

And so the only good manager is one who obtains a satisfactory rating at all three levels. But here he is evaluated primarily by the higher branch management, and he himself solves the problem of appointment or removal.

True, there is also the influence of local authority. As a rule, decisions are coordinated with local party agencies. But the collectives of subordinates in no way participate in the appointment. Their evaluation is revealed subsequently, with the submission of complaints about the already appointed manager. But only the collective of subordinates is capable of catching the shortcomings of the manager before they are reflected in the overall results of the activity, when the higher organization can generally not know about them in time. In order to break down a normally functioning organization, especially a large one, it is not enough to be a poor manager; frequently it is necessary to be a strong disorganizer in order to do this!

Human organizations are extremely vital and, as sociologists show, they resist the destructive influence of a poor manager by dozens of means: the arrangement of informal ways of bypassing decision-making, the appearance of powerful processes of self-organization, and so forth.

Recently the question of the selectivity of managers has been raised increasingly frequently. Here selectivity is understood simplistically, as the prevailing opinion of subordinates in solving the question of the appointment. Sometimes one has occasions to hear statements that even the approval of a brigade leader who has been chosen by the brigade as a shop chief is inadmissible. This is also an extreme. The procedure for the selections can be resolved in various ways, but obviously the main requirement on it is publicity and the representation of the interests of all parties.

It should be emphasized once again that we are speaking about the procedure for appointing a large group of managers--from the brigade leader to the director, and, perhaps, to the minister.

Not Dependency, But Interdependency

In this connection another issue should be raised: what will happen if the collective has been formed with antisocial group purposes and leaders? Or if antisocial groups or elements have made their way into a good collective?

Today's labor legislation is oriented completely toward defending the individual worker from abuses of the manager. It creates a very strong defense. It is so strong that all scientific recommendations for selecting and placing personnel have been suspended in air since it is extremely difficult in practice to transfer a pe rson from place to place. Everywhere one sees the "stalemate"

situation, where unconscientious workers block all the efforts of the manager to improve the work.

It seems that increasi ng the dependency of the appointment of managers on the collective should at the same time be accompanied by an increase in the dependency of individual subordinates on the manager. For it is not enough to raise the question of increasing the responsibility and discipline of the managers, as A. Avakyan has done. It is also necessary to increase the responsibility and discipline of all workers and the independence of the manager.



11772
CSO: 1820/169

CONSTITUENT CONGRESS OF SCIENTIFIC-ECONOMIC SOCIETY VIEWED

Novosibirsk EKO: EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA in Russian No 7, Jul 83 (signed to press 2 June 1983) pp 163-167

/Article: "Good Deeds and Accomplishments, NEO!"/

/Text/ A Scientific-Economic Society (NEO) has been created in our country. Economists have waited long for this event. Radio technicians have the Society imeni A. S. Popov, chemists have the Society imeni D. I. Mendeleyev, and other scientific and scientific-technical societies are in existence. And the first scientific society in Russia and one of the first in the world was the Free Economic Society which appeared almost simultaneously with the creation of the Moscow State University and has existed for more than 150 years. And now to the 23 branch scientific and technical societies that are jointed together by the All-Union Council of Scientific and Technical Societies (VSNTO) there has been added another interbranch society--the Scientific-Economic.

The founding congress of the NEO took place in the conference hall of the first building of the humanities departments of Moscow State University imeni M. V. Lomonosov. And a day before that the All-Union Scientific-Economic Conference, "Improvement of the Economic Mechanism in the Branches," ended here. Many speakers and participants in the conference were delegates to the NEO congress. And this was not a random coincidence. The two events are closely interconnected: university centers have played and continue to play a large role in the development of economic thought.

The chairman of the organizational bureau, academician T. S. Khachaturov, stated in his paper that at the time of the founding congress the NEO joined together in its ranks more than 5,000 organizations and about 400,000 active members of the society. These include scientists and specialists of planning, financial, and statistical agencies, institutions for material and technical supply, and economists of enterprises, associations, branches and departments. Having such a significant creative potential, the society has set as its goal to contribute to the development of economic science and to bring it closer to the needs of economic practice, and to assist in all ways to implement the economic strategy of the party and carry out the tasks set by the 26th CPSU Congress for changing the national economy over to the basis of primarily intensive development.

The collaboration of scientists and economists of various branches in the NEO can exert a significant influence on the implementation of the most important comprehensive programs--food, economizing on resources, development of the thermal energy, transportation and machine building complexes, and so forth. The speaker also noted the opportunities of the economic community in the development of territorial production complexes. "Is it not time for them to be organizationally formed as economic units, each having an independent system of administration? The development of questions of their development is an attractive and promising scientific and practical task," said T. S. Khachaturov.

The NEO can also render real assi stance in conducting economic calculations of the effectiveness of scientific and technical progress, in efficient and thrifty utilization of natural resources, in the justification of waste-free and reduced-waste technologies, and in public expert evaluation of the most important plans and programs.

Which work methods and organizational forms will be used by the NEO? In the society's central board, in the republic, oblast, kray and city organizations, and in the large primary cells sections have been formed for the most important areas of economic theory and practice: political economics, planning, administration of public production, automated control systems, economizing on labor resources, utilization of nature, material and technical suppply, and others. Contacts and communication regarding scientific interests within the framework of the sections will undoubtedly contribute to the origination of new ideas and decisions and the development of a collective opinion regarding crucial economic problems. The sections will conduct scientific conferences, seminars, symposiums and discussions, will organize reviews, exhibits and competitions, and will create creative groups for developing concrete recommendations and proposals.

The cooperation between economic science and production practice within the framework of the NEO can play a significant role in further improving the forms and methods of socialist competition and in organizing counterplanning.

Executives and party and trade-union organizations expect from the NEO recommendations for the development of collective forms of labor organization, which under the 11th Five-Year Plan should become the basic ones, and for improving the organizational structure and administration of production, autonomous financing, and methods of accounting and control of production expenditures.

The head of the department for organization and methods of administration of public production of the Moscow State University, Doctor of Economics and Professor G. Kh. Popov emphasized in his speech the importance of experiments on expanding economic independence and responsibility of managers of enterprises and associations. "In the scientific-economic society we should develop a detailed legal status of economic experimentation," suggested the deputy chairman of the Ukrainian SSR Gosplan, chairman of the Ukrainian republic NEO board, G. V. Dzis'.

The NEO aktiv has a considerable scientific and propaganda potential at its disposal. It includes academicians, corresponding members of the academies of sciences, and doctors and candidates of economic sciences. Great hopes are placed in them for raising the level of economic propaganda.

The NEO is being created as an interbranch society which will join together specialists and scientists of an economic profile regardless of the area of economics in which they may be working. And this is quite understandable. For many problems are interbranch in nature and require a combination of efforts. In this connection, one could not but be bothered by the tendency toward a departmental approach in the society in certain cities, where the NEO included primarily organizations and enterprises that belonged to the trade union of state institutions. Delegates to the congress--chairman of the Novosibirsk oblast NEO Board, academician A. G. Aganbegyan; the deputy chairman of the State Committee for Labor and Social Problems, doctor of economic sciences, L. A. Kostin; and the deputy director for economics of the Volga pipe plant, V. T. Trofimov--discuss the fact that it is necessary immediately, as the time of origination of the society, to avert all attempts at departmental limitations.

The delegate from Perm, an economist of the Perm Oblast Gosbank office, V. N. Krasovskaya formulated her opinion thus: "It is necessary to utilize the NEO as well as possible for contact among economists of the most varied spheres of activity. Here, for example, bank and financial agencies are in the mainstream of life of the rayons, oblasts and republics. The discussion of problems together with enterprises and organizations in an informal setting will contribute to strengthening the influence of the financial and credit levers on the economies of the enterprises."

The fact that at the time of the founding congress the NEO could be compared in numbers with many other scientific and technical societies that have been in existence for decades shows the great interest in the society. At the same time one cannot forget that there are about 4.5 million economists employed in the national economy, of whom 3 million are specialists with a higher and secondary specialized education. Economists comprise 11 percent of the specialists working in the national economy. These figures were given in the speech by the chairman of the section on finance and credit, director of the All-Union Correspondence Finance-Economics Institute, professor, doctor of economic sciences, N. G. Sychev. He reminded us that 53 economics and engineering-economics institutes and 138 departments of other higher educational institutions train specialists in the economics profile. The section for finances and credit consider one of the main directions of its activity to be the consideration of problems of coordination in the area of finances, credit and savings and in the area of training personnel for these specialists.

One must say that questions of coordinating and finding forms of cooperation with a ramified network of existing scientific and technical societies are crucial both for the sections and for the NEO as a whole. For all branch scientific and technical societies have their own sections for economics. Imminent scientific and engineering forces of a particular profile are concentrated in scientific and technical societies, and contacts with them are very important when developing many interbranch problems.

The deputy chairman of the USSR Gossnab, A. N. Lebed', from among the questions dealt with by the section for material and technical supply singled out efficient utilization of material resources and production wastes, and the use of containers and packages when shipping national economic cargo. Economic

calculation will have to be reinforced with recommendations of a technical nature, which can be developed only in conjunction with the engineering community of scientific and technical societies of various branches.

The interbranch principle of operation, extensive contacts and the development of the initiative of the members of the society--these are apparently the important conditions for its successful activity. This, of course, requires the corresponding base as well. Academician T. S. Khachaturov raised the question of creating a House of Economic Propaganda, which could have an economic library and could hold exhibitions of the achievements of economic science and practice.

The congress discussed and approved the NEO charter and elected the society's management agencies--the central board and the review commission. Academician T. S. Khachaturov was el ected chairman of the board.



11772
CSO: 1820/169

U.S. EXPERIENCE DISCUSSED IN VIEWING DEVELOPMENT OF SOVIET FAR NORTH

Novosibirsk EKO: EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA in Russia No 7, Jul 83 (signed to press 2 June 1983) pp 169-184

/Article by G. A. Agranat, doctor of geographical sciences, Institute of Geography of the USSR Academy of Sciences (Moscow): "Assimilation of the North: World Experience and Regional Problems"/

/Text/ The modern stage in the history of the Soviet North is marked not only by the quantitative growth of its economic potential and population. It is distinguished by a new approach to the development of unassimilated territory and new criteria for evaluating this development. The innovation is brought about, on the one hand, by the peculiarities of the northern regions themselves and, on the other, by the serious demographic, social, economic and ecological processes in the country as a whole.

The central problem of the North appears--a problem whose full significance has not been determined until the past decade. The Soviet North is the largest relatively little utilized territorial resource reserve in the country, and perhaps not only in the country. The outstanding significance of the region is determined by the existence and diversity of sources of mineral raw material and fuel concealed in it: petroleum and natural gas, coal, iron and nonferrous metals, timber, hydroelectric energy and fresh water.

The national economy needs the resources of the northern regions even now, but the demand for them will increase further. Is it not time to think about the uniqueness of the northern natural storehouse? The time has come when it is obvious that the riches of nature which can be utilized now and in the foreseeable future are finite and exhaust ble. And regardless of how favorably predictions may seem, it would be risky to rely on the discovery of new and equally rich and conveniently exploited supplies and sources such as we have now in the North.

Is it not time to raise the question of a more thrifty attitude toward northern resources? Is it not worthwhile to turn to searches for alternatives without ignoring foreign experience, both positive and negative? With the radical differences in the socio-economic and political approaches, from American and Canadian practice one can still single out that which is

dictated by the specific nature of newly assimilated regions, which is determined by sober considerations of scientists and state activists who have been forced to take into account the long-range interests of monopolistic capital. Here it is necessary to take into account that Siberia and its North, in terms of their level of economic assimilation, scope and depth of the problem, were long preceded by the newly assimilated regions in the United States and Canada.

American specialists have calculated that if during the decade of the 1980's they spend 60 billion dollars on insulating walls (especially joints), windows and doors of residential buildings, they will be able to save 160 billion dollar's worth of fuel. It is also necessary to keep in mind the possible and even probable increase of the technological significance of many kinds of raw material and fuel in the future. Canadians are planning by the beginning of the 21st century in individual regions of the country to limit the utilization of petroleum and especially gas as fuel. It is intended to have mainly technological consumption of hydrocarbons (although there are considerable potential supplies of liquid and gas fuel in Canada.

It becomes clear how essential it is to economize on any limited resources of nature, and not just on petroleum and natural gas. For example, in developed capitalist countries tendencies toward reducing the material-intensiveness of production and replacing metals with plastics are extremely apparent, which has been one of the reasons for the instability of the extraction of iron ore in the Canadian North in recent years.

When speaking about a thrifty attitude toward the riches of the North, one cannot forget about such a resource as territory and free space. It seems that space is becoming a no less valuable commodity than material and substantial resources. Substitutes are usually found for raw material, but there is nothing with which to compensate for a shortage of space. With all the extensiveness of the territory of our country and the comparatively weak assimilation of large regions of it not only in the North, one still cannot but take into account the possibility of a shortage of "free" space in the future. According to calculations of K. G. Gofman (Central Economics and Mathematics Institute of the USSR Academy of Sciences), if we maintain the current rates of economic growth and territorial national economic proportions, the industrial load on the European part of the USSR in th e future can exceed the current load on the territory of the FRG 2-3-fold--one must say, by a good deal. Even now the problem of efficient utilization of territory as a resource is becoming an object of serious research abroad (including in the United States where there is a good deal of free land). The majority of new branches of production are experiencing a need for free territories: the atomic,* solar energy and so forth.

Has the time not come to create certain territorial-resource reserves of a strategic nature? The reserves could be kept until the need for resources becomes more critical and when they can be used more comprehensively.

*N. Dollezhal' and Yu. Koryakin wrote (KOMMUNIST, 1979, No 14) about the expediency of constructing powerful complexes of atomic electric power stations, mainly out of considerations of safety, in remote and desolate regions of the European North. In Canada the same considerations are used to defend plans for moving plants that produce nuclear fuel to the North.

Creating reserves and conserving northern resources and territory have become an essential feature of state policy during the past decade. One-third of the area of Alaska has been singled out for national parks, preserves and other protected natural territories. There is a desire to limit the exploitation of the northern part of the American continent, since there is the possibility of obtaining raw material and fuel from the dependent countries of Asia, Africa and South America.

We are speaking about a long-term line; it certainly does not exclude the exploitation of natural resources of the southern regions on a growing scale. Consequently, a no less critical issue arises: how should one assimilate the northern territories and what approaches and criteria are needed here? The problem is not a new one, and many of its aspects have been known for a fairly long time,* but even now these are debatable. Yet practice and the latest results of theoretical research again confirm the principle correctness of the policy ofpreservation.

The most essential and pressing aspect of the matter is still, apparently, the need for a special economic policy that corresponds to the conditions of the assimilation of new regions.

In past years a good deal has been done to improve engineering and technical-economic normatives in construction and other branches. But no progress has been made on solving the problem of a special, beneficial normative for the effectiveness of capital investments in the assimilation of new regions, and above all in their infrastructure and in building up the territory.

Historical and modern, domestic and foreign experience show that newly assimilated regions need special state support at first, as it were, financial and economic braces. Subsequently, and fairly rapidly, they begin to stand on their own feet. Thus in the United States and Canada the capital-intensiveness of the assimilation of new regions is increasing; in other words, the effectiveness of capital investments is declining. According to approximate calculations, capital investments and current expenditures of private firms and state departments in Alaska and the Canadian North amounted to 5-6 billion dollars in 1951-1964, and the gross output of the main branches of the economy--4-5 billion dollars; during 1965-1978 these figures were 35-40 and 10-12 billion dollars, respectively. Thus the return is decreasing.

The increased capital-intensiveness of economic growth is a phenomenon that is typical of capitalist countries in the past 10-15 years. Among other things, it is caused by the change in the structure of investments in favor of expenditures with a smaller apparent effect (environmental protection and so forth), the increased cost and short supply of natural resources, and the advancement of social priorities. But if one turns attention to the specific factors in the decreased effectiveness of the assimilation of new regions, among them is a marked tendency toward fundamental production and social building up of the

*See, for example, EKO, 1975, No 1.

territory, and movement into the severe Subartic and especially the Arctic areas (shells). This requires large investments and extends the time lag between expenditures and their return. One can also see the effect of the increased expenditures on environmental protection measures which are relatively more rapid in inhabited regions,* and also the need to solve socio-economic problems of the indigenous population.

On the other hand, another, previously less marked, economic effect of the assimilation of territory is becoming more clearly manifested. Areas of concentration of the mining industry which previously needed financial support are being transformed relatively quickly into profitable regions and are becoming capable of providing for their own all-around development. This, of course, is a reflection of the rapid growth of prices for mineral raw material, and especially fuel. Thus the Alaskan budget, with the development of the petroleum industry there, depends to a much lesser degree than previously on allocations from the federal government. According to recent calculations of V. G. Pavlov and R. R. Simonyan (Institute of the World Economy and International Relations of the USSR Academy of Sciences), with the advancement of the mining industry into the remote and less assimilated regions, for example in Canada and Australia, expenditures on extractions (as compared to world prices) have not increased.

Thus one cannot consider the small financial and economic effectiveness of the assimilation of new territories to be an absolute evil. One must think about other development and preservation of these territories and regard expenditures from the standpoint of the final, in the broad sense of the word (within the framework not only of the enterprise and the branch, but of the region as a whole) national economic results. As has already been noted by specialists, the unjustifiably low prices on products of the extraction industry excessively reduce the effectiveness of the assimilation of regions of Siberia and the North. The statistically low effectiveness or even losses can be apparent, and not correspond in fact to the value of the resources that are delivered. The idea that the assimilation of the East and North is a heavy burden for the country's national economy is limited in terms of space and time. Factors that increase the cost of production in Siberia and the immense expenditures on building up the territory certainly do not necessarily mean higher cost of the products. On the contrary, the unique resource potential, as a rule, provides for a high effectiveness of public production.

It is apparently time to change the methods for evaluating the economic effectiveness of the assimilation of new regions and to think about a more rational distribution--branch and territorial--of autonomous financing funds, and above all profit, which are brought in by the eastern and northern territories.

The development and substantiation of the most effective socio-economic policy seems to be mainly the development of newly assimilated regions. Excessive hopes are sometimes placed in organizational-scientific and administrative approaches; they are undoubtedly of no small significance, but they

*Proportional expenditures on environmental protection, for example, in the zone of the Alaska pipeline are 2-3 times as great as in the central belt regions of the United States.

cannot solve the problem without basic socio-economic, management and ecological principles and criteria of medium-term and long-term planning. In other words, in the special-purpose program developments and in regional programs for new regions special attention should be given primarily to the theoretical aspect of the matter. The difficulty lies in the fact that even many of the general methodological premises and postulates of the theory of economic assimilation are not yet clear here.

The new requirements on the economic policy in newly assimilated regions are becoming increasingly insistent and frequently make it necessary to adjust already adopted decisions concerning economic construction and population of the northern regions. We have in mind primarily streamlining the structure of management. There are tendencies toward diversification of the economy, deepening of the processing of raw material and expanding auxiliary and service productions.

This is well marked, for example, in Alaska: petroleum and gas chemistry, small machine building and metal processing have appeared there, they have arranged the production of cement, and there are smelting plants, housing construction combines, repair services and so forth. They have long been developing plans for the creation in Alaska and Northern Canada of ferrous and nonferrous metallurgy enterprises, and plants for compressed gas and the production of nuclear fuel using local raw material.

As we can see, the process of assimilation and population of the territory is changing ideas about the disadvantage of creating a multifaceted economic base in new regions, or in any case it is making such assertions less categorical. Large firms sometimes find it convenient to organize local service productions. Scientific and technical progress contributes to this: new technologies, and above all microelectronics, increase the economic effectiveness of small (but with a large list of items) metallurgical, machine building and other enterprises. The broad scope of development of microprocesses and robot technology, which sharply reduce the labor-intensiveness of production, can be an important stimulus for the assimilation of new regions where there is a shortage of labor.

Moreover, monopolies, being forced to orient themselves more or less toward long-term competitive advantages (there has even appeared the concept of "risk capital"), in economic decisions frequently depart from narrow value calculations and look for a certain commercial risk. In the newly assimilated regions where the prospect for profit are generally favorable but not always specific, there are actually no other reference points. An example of this can be the construction of multiple transportation mainlines in Alaska and the Canadian North. Along the basic mainline--the railroad, pipeline or waterway--there are parallel transportation lines of a different type, usually air corridors. The multiple mainlines open up broad prospects for the development of the territories adjacent to them.* In the technical and economic sense they

*For more detail see EKO, 1983, No 1.

are advantageous even today: according to calculations of specialists, because of efficient distribution of shipments, the facilitation of repair work and other advantages, transportation and operational expenditures decrease by 20-40 percent as compared to mainlines with single types of transportation.

The reliance on capital ground routes is considered justified even when the calculated volume of shipments is not yet great. Thus highways have already been built to the Arctic coastal regions of Canada, where sea and river transportation are still quite capable of handling the shipments. The former minister for affairs of northern Canada asserts that the construction of northern transportation routes cannot be justified on the principle of "recouped financing," and it is necessary to "look into the future."

A broad approach is also necessary when developing the local food base. Agriculture which serves the local population should be regarded as a basic branch of the infrastructure, which helps solve the problem of reliable habitability of the territory and to improve the lives of the people in the bleak regions. And hence also the corresponding "beneficial" economic approach.

Let us turn again to foreign experience. In Alaska small farms (mainly vegetable growing, dairy cattle raising and poultry raising) have long been experiencing the harshest competition from the main agricultural regions of the United States which deliver their products there inexpensively and quickly. The local farmers cannot get out of debt. But recently state and above all local agencies of authority have been trying to assist in the development of the local food base, offering extensive scientific and technical assistance, new subsidies and so forth (similar to the way this is done with respect to other elements of the infrastructure). It is remarkable that the expensive, but "their own" fresh products are considered chemically more "pure" and are in greater demand than the less expensive products which are shipped in from a long ways aways (frequently fresh frozen or dehydrated). According to the estimates of specialists, by 1990-2000 local production will provide a significant proportion of the milk, eggs and vegetables in Alaska (no less than 50 percent).

The current state of affairs and the special-purpose programs give us reason to think that in our North and in the contiguous regions of Siberia the development of their own food base will proceed much more intensively.

The so-called regional investment funds have become an indicator of the long-term approach to assimilating uninhabited territories. They are necessary to maintain the economic tone and employment in the regions of large-scale mining industry after the exhaustion of the raw material base. These funds are formed from deductions (25 percent in Alaska) from the taxes on mining and especially the highly profitable petroleum and gas extracting companies.

In Alaska, according to one of the variants of the prognosis, by 1991 they will exceed 10 billion dollars (the sum is significant on Alaska's scale) and by the end of the century, with the exhaustion of the deposits of petroleum and gas, they will decrease to 3 billion. Here and in the unassimilated regions of Canada the funds are to be utilized for financing the development of the supplies of mineral raw material, timber resources and hydraulic energy that are not the most profitable, and for diversification of the economy.

The question of an efficient structure of the economy is not simple, it depends on regional conditions, and there is no simple answer. But the tendency toward multilateral development of the territory is becoming increasingly expressed; it is dictated by the new economic and social criteria and modern views on the prospects of assimilated "resource" territories. Leading Soviet economists think that the development of the Siberian economy lies along the path of creating metallurgy, the pulp and paper industry, chemistry and other branches with extensive processing of raw material and the production of prepared items. The regions of the North will enter on this path, in any case the southern territories of it.

Although the North will apparently retain forever its "economic individuality," which is determined by the natural and geographical conditions, with the course of scientific-technical and socio-economic progress the boundary between the North (at least its southern regions) and other areas of Siberia will become less sharp. It is no wonder that the question of the southern boundary of the North is still debatable. A well-known Canadian expert on the North, L. E. Omlin generally asserts that with the assimilation of the North its boundary as an economic and geographic concept will increasingly recede. The North, within the boundaries accepted in literature, occupies immense territories: approximately 50 percent of the area of our country and more than 70 percent of Canada. The North includes the majority of newly assimilated regions, both in Siberia and Canada. The overall space of the Soviet North within these boundaries is about 11 million square kilometers, and in foreign countries (Alaska, the Canada North, Greenland not including the icecap, Iceland, Northern Norway, Sweden, Finland and Spitsbergen)--9.5 million square kilometers. The populations are more than 8 million and 2.5 million, respectively (at the beginning of the 1980's). On 20.5 million square kilometers there are only 11 million people: a collosal territorial reserve! In our country this reserve should be regarded essentially as a continuation of the more southern areas; if one is to speak about the North toward the east of the Urals it comprises the prospects of Siberia and the Far East, and their future.

The strategy of assimilating new regions is distinctly manifested in the nature, system and forms of population of the territory. The expansion of the network of cities and workers' villages in the East and North--bases for assimilation and multifunctional centers with a developed social infrastructure--reveals the line toward stable habitation. The need for building up an all-around infrastructure for the regions that are being assimilated was emphasized in the decisions of the 26th Party Congress. And here it is appropriate to recall the cautious attitude toward the watch method of assimilation of the territory. Of course in the most severe and remote regions this method is justified, but it does not provide a basis for subsequent development of the territory.

One should not be confident too soon that the assimilation of the future region which is rich in natural resources will be limited to the creation of one or two extracting enterprises and thus justify the notion that multifunctional villages with a permanent population are inexpedient. Moreover, as is clear from the example of the United States and especially Canada, scientists, administrators and even representatives of private companies, to whom it

would seem to be especially advantageous to have the watch method, are turning their attention to many of its shortcomings. Frequent trips reduce labor productivity, disturb the work rhythm, lead to family disorders and so forth. American specialists assert that the increased percentage of rejected work in welding the pipes of the Alaskan pipeline (as compared to the main regions of the United States) is related to the watch method of work: the welders had not managed to adapt to the Arctic conditions, and the situation of bivouac settlements did not contribute to high quality of labor.

The motivation for transferring people to the North have changed. Sociological questionnaires in the United States and Canada show that earnings are playing a smaller and smaller role, and an increasingly large role is being played by the desire for social and cultural benefits, a more independent life, the desire to live closer to nature and to leave the crowded dirty cities and moral and psychological stress. The fairly intensive migration of population from the large cities of the United States into the provinces and the remote areas indirectly confirms the objective nature of the new tendency for the North. The term "the Alaskan way of life" has even appeared.

And there is something else that must be taken into account if one is to speak of the distant (or perhaps not so distant) future. Certain scientists, including one of the imminent Soviet climatologists, M. I. Budyko, thinks that because of the increasing pollution of the atmosphere with carbon dioxide, in the next couple of decades the Earth's climate will become considerably warmer. The warming will be reflected primarily in the northern regions, over a considerable part of Siberia.* At that time the conditions of life and production can turn out to be more favorable here, farming will advance farther to the north, and, in a word, the significance of the North will change radically.

But so far problems related to environmental protection and efficient utilization of nature have come to the fore. It will be necessary to reveal the maximim permissible levels of economic loads on the ecological systems of the North which are extremely sensitive to man's activity. Abroad, and particularly in Alaska normatives which are territorially differentiated in terms of ecological and geographical regions are beginning to be put into practice. They frequently make it necessary to make significant adjustments in the plans for development and distribution of productive forces. Thus it is not everywhere that northern nature can withstand the territorial accumulation of industrial enterprises and large territorial production complexes; perhaps they will have to be spread out.

The proper amount of population has also taken form for the extreme conditions (sparser than for the central belt areas). Excessiveness has already led to a situation where Fairbanks (Alaska) with a population of 50,000 until recently was no less polluted than one of the most polluted American cities--Los Angelos with a population of many millions. Because of ecological considerations it is sometimes expedient to have a distance (50-100 kilometers) between the place of work and the place of residence.

*Budyko, M. I., "The Current Change in Climate" in the book: "Sotsial'nyye aspekty ekologicheskikh problem" /Social Apsects of Ecological Problems/, Moscow, "Nauka", 1982.

In the complex ecological and geographical situation of the North, and in Siberia as a whole, the development of comprehensive territorial systems for the protection of nature, which was prescribed by the decree of the CPSU Central Committee and the USSR Council of Ministers concerning additional measures for stepping up the protection of nature and improving the utilization of natural resources (December, 1978) becomes especially crucial. The same thing must be said about the methods for measuring the damage to nature and ways of evaluating natural resources and other elements of the environment.

The devices that are suitable for long assimilated areas, where the practical value of discovered resources is obvious, are not suitable for new regions, especially northern ones. Here one cannot measure the value of natural wealth according to today's value measures. It is necessary to learn to determine the losses which we will cause tomorrow and the day after if we violate conditions of the eternal frost, remove the soil and plant cover in the tundra and forest tundra, or reduce the capability of the northern expanses to purify the atmosphere. It is quite apparent that it is necessary to take a systematic quantitative-qualitative approach, which can account for the effect that is probable and predictable, but so far not subject to strict measurement.

With respect to the unassimilated regions, one can see clearly the correctness of the views of Soviet scientists (N. P. Fedorenko, P. G. Oldak, M. Ya. Lemeshev, N. F. Reymers) concerning ecologization of economic concepts and approaches. For example, which territory is "richer": the unassimilated one with an untouched ecological and territorial potential, or the one that is inhabited, but ecological "overloaded" with business and population?

These questions are far from academic--they are purely practical. For certain economists are already trying to substantiate a high comparative effectiveness of the assimilation of northern regions by the fact that the proportional expenditures on environmental protection are considerably less than in inhabited areas. Is it necessary to account for (and how?) losses, say, from small birches and willows that have been killed or from causing the territory to be swampy? Yet to evaluate only the losses that are apparent today, for example, the damage to reindeer raising, hunting and trapping, means not to take into account the multifacted future role of the North.

It is apparently most correct to calculate losses according to expenditures on restoring the disturbed elements of nature as was suggested by S. G. Strumilin. True, for the North the application of such an approach is not simple because of the great duration of restoration processes (lichens--100-120 years, small birches and willows--up to 200 years), and in many cases it is not clear whether restoration is possible at all. In the mathematical interpretation the losses would be infinitely great, which can formally show the irreversability of certain violations of nature and the danger of losing immense expanses for future generations.

From the review of problems related to the development of new, and primarily northern, regions, it seems to us that three principle methodological conclusions follow. The first of them consists in that the complexity and, one might say, the contradictory nature of the factors that determine the selection

of ways of assimilating the territory is increasing. In a mature socialist economy new requirements and criteria for social development arise predictably: we can and must think about the more distant future, about satisfying social needs, and about protecting and radically improving the environment.

The new approaches and requirements sometimes conflict with the sterotypical model which is based on narrow value financial calculations which far from always enter in to the conditions for economizing. One hardly need fear such contradiction; they are inevitable, and one should search for ways of overcoming them.

The second conclusion consists in that newly assimilated regions serve as an excellent testing ground for experimental verification and implementation of proposals from scientists in the areas of economics, sociology, organization and administration, technology and ecology. In unassimilated regions, which are not burdened with complex layers of prolonged human activity, progressive undertakings proceed more easily and their results are more evident.

The relatively simple and young economic structures of the new regions are especially responsive to scientific-technical and economic innovations. Thus integrated methods of administration (a unified general contractor) in private business in the United States were first tested in the construction of the Alaskan pipeline. Artifical earth satellites with a geostationary orbit (rotating with the same number of revolutions as the planet) appeared for the first time on a large scale over Alaska, where they are used for television and video cassette programs and automatic radio-telephone communications. It is suggested that multichannel satellite communications be arranged for the remote regions of Alaska with electronic computer centers in the large cities. Thus the North is one of the first areas where the latest achievement of the scientific and technical revolution is being applied--the combination of modern means of communication and electronic computer equipment, "computerization over a distance."

And, finally, the third conclusion. The proposed approaches to solving the long-range problems of assimilation can seem to involve a certain economic risk, and in fact there is one. It seems, however, that under the highly dynamic conditions of modern scientific-technical and socio-economic progress, risk--if it is reasonable and substantiated--becomes one of the necessary factors in long-range planning and prognostication.

With respect to our object--the immense, severe, unassimilated and not very well studied expanses--the risk and lack of determinacy seem quite predictable.

Here is an example of such a lack of determinacy from foreign practice. The actual cost of construction in the new regions turns out, as a rule, to be much greater than the estimated cost. In 1969 the construction of the Alaskan pipeline was estimated at 900 million dollars, but by 1977 it had cost 8 billion dollars; the estimated cost of the gas line from Alaska to Canada to the main regions of the United States is regularly increasing: since 1977 it has jumped from 9-10 billion dollars to 40-50 billion dollars. There are no such large ranges in the assimilated regions of America. And here it is not so much a

matter of inflation and other vices and contradictions that are typical of capitalist countries as it is the impossibility of foreseeing those requirements which will be placed on them by nature and the economy in the severe regions which are far from being fully studied.

Here one must stipulate another thing: the long-term approach to the assimilation of new regions can, in a number of cases, require additional funds or a revision of plans in one direction or another. Sometimes it is more reasonable and more advantageous to take fewer steps in the planned direction, but to make them solid and reliable, than to hastily proceed along temporary paths, which sometimes do not lead to the future. It seems to us that domestic economic science and practice has come firmly to this conclusion. For here too lies the path of intensification of the economy.



11772
CSO: 1820/169

ADVICE OFFERED TO HELP REDUCE PROBLEMS ASSOCIATED WITH OFFICE PAPERWORK

Novosibirsk EKO: EKONOMIKA I ORGANIZATISYA PROMYSHLENNOGO PROIZVODSTVA in Russian No 7, Jul 83 (signed to press 2 June 1983) pp 185-198

/Article by I. V. Lipsits, candidate of economic sciences (Moscow): "A Short Course in 'Paper Dietology'"/

/Text/ Do not be surprised that this article has the title "Advice to a Businessperson" and not "Health--An Economic Category." This was not a mistake. We shall speak precisely about a diet, but a very specific kind of diet--reducing the paper information which the manager must "swallow" and "digest" day after day (it is no wonder they say that for modern administrators paper is becoming their "daily bread").

Indeed, the excessive flow of paper which rains down on managers of all levels leads to extremely dismaying consequences: they are swamped with current affairs, and they have no time to study the future and determine their strategy of development. For many managers the desk flooded with papers is a source of constant uneasiness, work every evening, dissatisfaction with the management and the wife, and in the end, a gradual breakdown of health . . .

This is precisely why specialists on problems of administration devote a great deal of attention to searching for possibilities of lightening the paper "avalanche" and freeing the time of the managers for more productive duties than constantly reading business correspondence.

According to the estimates of certain experts, almost one-third of the document turnover is useless papers. Before giving advice on "paper dietology" it would first be worthwhile to explain why it is precisely on the desk of the manager that one sees surplus papers whose absence would not worsen the work of the subdivision of which he is in charge or the enterprise as a whole.

Reasons--Outside and Within Us

Documents for storage. It has long been proved that a considerable part of the documents can be completely replaced by telephone conversations or personal contacts with involved parties, especially if they work at the same enterprise or in the same organization. Regardless of how skillfully a document may be drawn up, in terms of its information value it is never as good as personal

communication. The appearance of these papers is frequently related to the desire to store up documents "for any event": they say I have worked as hard as I can, and if nothing has come of this it is not my fault . . . there is an especially large amount of such documents in organizations whose management, when there are any failures, is inclined to search not for ways of solving the problems that have arisen, but for "scapegoats."

A good deal of paperwork is created only because the managers and subordinates are trying to make an impression on one another. The subordinates try to demonstrate their absorption with the fulfillment of instructions from the management and thus remind them once again of their zeal. And the managers by creating unnecessary documents somehow show their subordinates that they, in the first place, are constantly involved in all the details of the activity of their coworkers, in the second place, the reports of their subordinates are not exhaustive enough and, finally, they want everybody to feel that they are in charge there . . .

An Unsuccessful Organizational Structure. Frequently the excess of documents is related to the fact that you have too broad a sphere of competence or you are directly responsible for too large a number of subordinates. Psychologists have established that the manager is capable of satisfactorily dealing with his duties only if he is directly responsible for the work of 7-8 subordinates. In such situations you are instructed to appoint another deputy or to redistribute the duties among assistants. In the most extreme case it is possible to radically change the organizational structure of the subdivision, which requires, of course, careful study of the forthcoming expenditures and possible consequences. An additional deputy usually costs less.. . .

You read slowly. It is possible that you yourself are to blame for the appearance of "snowdrifts" of paper on your desk: you have not sufficiently mastered modern methods of office work. Of course, with the volume of documentation which it is necessary to process each day, you probably read fairly rapidly. But is your present reading speed sufficient? Unfortunately, only a few managers can give a positive answer to this question--those who have taken courses in speed reading and become convinced that this is a worthwhile matter. For the rest training in speed reading courses or independent mastery of this technique is absolutely necessary.

Lack of confidence in subordinates. An immense amount of assistance can be provided by skillful delegation of duties. All managers turn to this, but not all of them have the repetitive correspondence go through the hands of subordinates, freeing time for the manager to resolve the more complicated and unusual problems.

One must not underestimate one's subordinates. As a rule, they are more skilled and efficient than their managers are inclined to think. Trust your subordinates! This will be repaid 100-fold.

Experience shows that a widespread characteristic which can be called an excessive drive for perfection can be an obstacle on the path to successful delegation of authority. Managers who have this characteristic unshakably

believe that they can write a letter, prepare a report or make a decision much better than any of their subordinates. Perhaps this is true, but if you are not able to suppress in yourself the instinctive desire to intervene and to improve everything that is done by subordinates, you do not have the time to master the art of delegation of authority. When reading a document that has been prepared by a subordinate you must always ask yourself the question: "And would I really have written it better? What will really change if I edit this the way I want to?" And if you cannot give a strictly positive answer to these questions cut short your urge to edit and use the energy you have not spent on consistent observance of the main principles of skillful delegation of authority:

determine precisely the goals which you've set for your subordinates. Make sure that they have been understood, what is required and precisely how you will subsequently evaluate the work that has been done;

indicate clearly the rights that you have assigned to the coworker to whom you have entrusted one job or another. Make sure that he is clearly aware of the limits of his authority and understands what he can and cannot do and which resources he is free to use;

motivate and interest your subordinates by selecting for each precisely those incentives which are the most desired for them--money cannot buy everything!;

check on the fulfillment of the instructions. Here you should render immediate assistance to your subordinates if it is required.

Careless subordinates. In order for the delegation of responsibilities to bring a real advantage in the fight against the flow of paper, among other things it is necessary for the documents that have been prepared to appear on your desk completely ready for a signature. In an extreme case there should be minimal editing. But if the situation is different this means that you must immediately begin to teach your subordinates the rules of drawing up business correspondence.

For managers of higher levels it is very important which documents are submitted to them by the lower managers. If they simply pass on to you reports and recommendations from their subordinates it means that you have not taught them how to work, and your payment is the same mounds of paper on your desk. You must handle only the general documents that reflect the personal position of the lower managers regarding one issue or another that have been forumulated taking into account the opinions of their own subordinates. And if they cannot generalize, you and nobody else must teach them, and if this does not produce results you should think about whether or not your assistants are qualified for their jobs . . .

"Paperwork discrimination." Strange as it may be this really exists. The fact is that we all love to deal only with that which is interesting to us, in which our capabilities shine. This also pertains to paperwork: many managers consider first the documents regarding the problems that are most interesting to them. Next usually come problems to which special attention

is devoted by the immediate supervisor of a given manager. The rest of the paperwork is shoved into a back drawer until either there are no more interesting papers or the consideration of these becomes an immediate necessity.

As a result, at the bottom of the drawer are all those papers with especially complicated, uninteresting or tiresome matters, regardless of their actual importance and immediacy. Since there are usually more of these papers than there are of interesting ones, as a result this leads to a constant increase in the proportion of "incomplete paperwork" with all the unfavorable consequences that ensue. One can cope with such a pheonomenon only by adopting the following principles:

sort all the incoming correspondence;

throw away the unnecessary paper;

immediately send all the standard papers to your subordinates for processing;

deal first with the tedious, unpleasant, complicated and uninteresting matters;

leave the more interesting and pleasant matters and papers until the end of the working day.

The aforementioned causes of the problem we are considering are fairly universal, but nonetheless many managers "digest" the flow of paper effectively enough, while others pay for this with their own health. For the latter the problem of a "paperwork diet" becomes extremely crucial.

Four Types of "Paperwork Failures"

The "superexecutive." The manager of this type each morning jumps on the file of incoming correspondence as on an enemy, and does not let go until he has studied most attentively all letters, reports, and invoices and has transferred them to the outgoing file. In his heart he considers himself an excellent worker and is truly offended that for some reason he is passed by when promotions come around.

But this "unfairness" on the part of the higher management is quite justified. In the first place, subordinates are usually extremely dissatisfied with such managers because they never have enough of any kind of interesting or independent work. Therefore all the more or less conscientious subordinates try to leave him to go to another subdivision which, naturally, alerts the management of the organization.

In the second place, this manager simply cannot be promoted because nobody in the subdivision except him knows how to solve one problem or another. He usually tries not be ill and goes to work on his last leg, so long as he does not fall down. Since they cannot find a worthy successor, the management decides not to move him. In addition to this there is the danger that with this style of work he would simply overstrain himself in a higher position.

The "disseminator." This reduces to the absurd the principle of delegating responsibilities, recalling the center forward who instead of organizing the attack and going to storm the gates himself, tries only to get rid of the ball as quickly as possible, passing it to whomever is there. He thinks that his subordinates are there to do all the work. Typical resolutions of such a manager are: "Please deal with this" or "This must be decided."

Such a manager can fairly quickly break down the mountain of papers on his desk, by loading his subordinates to the limit. But this does not bring any special success or recognition from the management. On the contrary, he frequently has to hear complaints about the low quality of documentation that comes from his subdivision and failure to meet the deadlines for preparing it. These reproaches cause irritation in the "disseminator," who places all the blame on his subordinates, constantly complaining that he "simply does not have anyone to work with or on whom he can rely." Such statements, naturally, do not strengthen his authority among his subordinates, and the management is in no hurry to promote him, although he himself deep down in his heart considers himself to be an excellent organizer.

"Red tape workers." This type of manager nourishes a real revulsion for paperwork and spends a minimum amount of time behind his desk, constantly putting off the reading of correspondence. Alas, even the most active participation in production activity does not save him from the dissatisfaction of the management. The reason is the constant delay of reports from his subdivision and the slow reaction to important documents which he has deigned to take in his hands only after the deadline for a response has long passed.

As a rule, "red tape workers" can be mobilized at the last moment, they develop an insane speed, and at the very last moment the documents are ready. When there is a critical shortage of time he works even better. But the problem is that such a manner of work leaves no time for checking recommendations or searching for more effective ways of solving problems which, naturally, does not escape the attention of the management.

Subordinates do not like "red tape workers" either, and they are irritated by the constant state of emergency.

The "Antibureaucrat." He sees himself as an ideological fighter against paperwork and therefore asserts that 99 percent of the correspondence that comes to him is garbage which is suitable only for the dump. It is necessary to give the "antibureaucrat" his due--his words are in line with the facts. Having hardly glanced at it, he puts the majority of his correspondence in the wastebasket. The "antibureaucrat" gathers the necessary minimum of information from personal contacts with other managers. This helps him to "keep afloat" although he frequently ends up in a stupid situation when at conferences with the management they begin to discuss an important document or a plan about which he has no idea. The management usually does not value "antibureaucrats" very much since one can rarely expect from them valuable initiative which goes beyond the framework of their own subdivision and, moreover, they have the same shortcomings as the "red tape workers."

Incidentally, do you yourself happen to be some type of "paperwork failure"? In order to check on this use the table, in which you must note those answers to questions which correspond most to your manner of work with documentation.

Table. What is Your Work Style?

| | Quite Correct | Perhaps Correct | Not Quite Correct | Quite Incorrect |
|---|---|---|---|---|
| Group 1 | | | | |
| When I have absolutely urgent work, I frequently put new papers to the side. | | | | |
| When I am not too burdened with other matters, I take care of most of the papers myself. | | | | |
| I handle the correspondence myself because nobody else can do it and the sight of unread papers irritates me. | | | | |
| Group 2 | | | | |
| I have to overcome internal resistance when I instruct a subordinate to prepare an important document. | | | | |
| My subordinates prepare a large part of the documentation on less important problems. | | | | |
| I turn to friends for assistance only when the possibility of unpleasantness on the job becomes extremely real. | | | | |
| Group 3 | | | | |
| I am irritated by the fact that I have to spend so much time on routine paperwork, and when I am busy I put paperwork to the side. | | | | |
| I do not consider myself obligated to answer every letter that is addressed to me. | | | | |
| I do not think that the volume and nature of business correspondence reflect the success of my work or my position in our organization. | | | | |

Table (Continued).

| | Quite Correct | Perhaps Correct | Not Quite Correct | Quite Incorrect |
|---|---|---|---|---|
| Group 4 | | | | |
| When I encounter a crisis situation I do not have enough time to register it in documents. | | | | |
| Just the thought of possible unpleasantness can cause me to finish writing a job report. | | | | |
| As long as I have more important matters, I put routine paperwork to the side. | | | | |

Now count up the points you have gathered: For each answer "Quite justified" give yourself 3 points, for "perhaps justified"--2 points, for "Not quite so"--1 point, and for "Not at all so"--0 points. The points must be added up separately for the 4 groups of questions.

If in the first group you have 7 or more points you are most likely a "super-executive" and therefore are inclined to do more than the necessary proportion of paperwork yourself, while underloading your subordinates. If you also have quite a few points (5 or more) in the fourth group, it means that you also have the characteristics of the "red tape worker." This means that your reputation and carreer are threatened. True, some of the higher management like the fact that you are constantly busy, but the label of a "true campainger" certainly does not guarantee promotion or the respect or colleagues and subordinates.

If you have 7 or more points in the second group you are most likely a "disseminator." Of course delegation of responsibilities is one of the most important rules of the modern science of administration. It can significantly facilitate your work, naturally, if you delegate correctly. Yet many such managers, attracted by delegating authority, forget about the need to constantly teach and supervise those to whom they give one assignment or another. Thus they frequently put themselves under attack. For in the final analysis the manager is responsible for everything. Of course, by making mistakes and correcting them you gradually master the art of delegating authority, but it is best to shorten the painful path by studing the literature on questions of administration.

If you have 7 or more points in the third group it means that you have the characteristics of an "antibureaucrat" and you are inclined to ignore the importance of paperwork. Such habits can cost you a great deal if in your organization the volume of paperwork is great and a good deal of significance is attached to it. Therefore it would be worthwhile either for you to change your attitude toward "paper turners" or to find for yourself a place in the organization where there is less paperwork.

Finally, if you have 3 or less points in the fourth group you are too zealous about paperwork, forgetting that there are matters that are more important that require your personal presence. But if you have 7 or more points in this group it means that there is too much in you of the "red tape worker" and you are doomed to receiving constant reproaches from the management for delaying various kinds of documents. You can only be instructed to take a more differentiated approach to incoming documentation and to delgate authority more extensively.

If the number of points you have in all 4 groups of questions are approximately the same and range from 3 to 5 this can be evidence of a reasonable attitude toward paperwork and the lack of clearly expressed characteristics of a "paperwork failure" in you.

Of course it is nice, but still it is difficult for you to cope with the volume of paperwork that comes in to you each day. Let us see whether it is possible to reduce document circulation in general.

Look Soberly at the Papers

First of all it is necessary to overcome a kind of psychological barrier which impedes taking a more sober look at the papers one must deal with each day. With the first steps of independent activity the managers become accustomed to the idea that handling correspondence is an indispensible part of their work. Yet business papers are only one of the means of achieving useful results and certainly not the essence of the work. Briefly, a manager is paid for the results of the activity of his subdivision and not for how much paper this subdivision puts out during a year. This is precisely why it is extremely crucial to reduce the "paper-intensiveness" per unit of useful activity of the subdivision. How does one achieve this?

To begin with try today to look on your daily correspondence with a new attitude, as if you are seeing it for the first time in your life. Ask yourself several naive questions: "Why do I need all this paper at all? Will this document help me in my work or should it go straight to the files? When was the last time I had occasion to use this kind of information?" Experience shows that if a certain kind of information is used only rarely, it is extremely probable that one can do without it completely. Therefore, having come across such a document in your mail you can freely stamp it: "superfluous document, get rid of it!" and return it to the person who sent it to you.

Correspondence coming from another organization can be approached in the same way. Frequently, once we have established contact with some institution we regularly receive quite unnecessary information from it. Politeness forces us to answer, but the answers in turn are regarded as evidence of the importance of the information. The circle of useless document turnover is closed. It can be broken if you politely, but resolutely indicate to your correspondents that they must limit themselves to the actually necessary minimum of information, and otherwise you will cut off correspondence.

There is no reason that the system of document circulation that exists in your organization cannot be changed. More than likely it has taken form historically, and everyone has become accustomed to it. But if only one thoughtful person discovers that the traditional form of accounting does not produce anything new and only duplicates information that comes through other channels, others will immediately take note of this. And together they can persuade the management to change the form of reporting. This frees up a large amount of time for you to participate directly in the production project. If you do not see possibilities of reducing document turnover, turn for advice to subordinates who directly handle one kind of document or another and can see their shortcomings more clearly.

The method of control according to deviations is very effective. By this method you receive reports not about the course of business in general, but only about the deviations from the normal development of events.* Finally, refrain from the habit of accumulating copies of documents just in case you may suddenly need them. Store only the actually important papers!

Another great effect can be produced by restructuring the system of document turnover on a scientific basis, using consultants in the administration and utilization of the latest ideas in this area. One of the most interesting methods was proposed by French specialists in problems of administration.

Contour Tables

The essence of the method consists in that each manager must receive information immediately in order to react promply to any event or to prevent it. For this he needs only the most important information, but he must receive it as quickly as possible and it must be about the most important things.

The contour table of administration has 3 peculiarities:

the information included in it is not universal, but is clearly differentiated according to the subdivisions of the enterprise;

the methods, devices and speed of gathering information for it are different than for ordinary accountability;

the group of indicators included in the contour table is strictly limited to that necessary to the manager of a given subdivision for prompt decision-making.

Contour tables include only that information which is ready for utilization when adopting on-the-spot decisions regarding production administration and pertain to key points in production. The key points that form the basis of the contour table are limited to the main tasks of a given subdivision and those tasks whose resolution is most directly reflected in the achievement of the basic goals (for example, obtaining a certain quantity of batching items, and so forth).

*See Lester R. Bittel', "Control According to Deviations," EKO, 1980, No 1.

The indicators of a contour table characterize the results of the activity of individual subdivisions and of the entire enterprise for a small time interval--as a rule, a month although if the enterprise has electronic computers and an automated system for gathering information they can be drawn up annually.

The selection of indicators for the contour table is carried out in keeping with the following principles:

they pertain only to one function of the enterprise, for example, production;

the indicators should be homogeneous and provide for comparability of various subdivisions, and therefore preference is given to relative amounts (percentage indicators, indexes and graphs);

where it is possible traditional statistical indicators (pieces, tons and square meters) are replaced by proportional ones (smelting of steel from one furnace, number of ton-kilometers per one motor vehicle, and so forth);

the indicators are selected with agreement among the managers of the subdivisions and their direct chiefs, since subsequently the activity of the managers themselves will be evaluated according to them;

the receipt of information for calculating the indicators that are included in the contour table should not present special difficulties or require large time expenditures.

The application of the tables, according to the data of the Association of Commercial Managers of France, makes it possible to sharply reduce the quantity of operational information with a simultaneous improvement in the quality of administrative decisions. The method of contour tables can be introduced only within the framework of the organization as a whole. But one can also try to reduce the volume of correspondence oneself.

Nine Useful Pieces of Advice

Prepare stamps for standard responses. As a rule, a considerable proportion of the letters require quite standard responses which differ only in minor details. For this kind of correspondence get rubber stamps with standard answers which can be stamped directly on the margins of the letter that is received so that it can then be returned to the sender. This sharply reduces the amount of time required for going through correspondence, the volume of archive documentation and time expenditures on searching for the initial letter. Here, except for resolutions that have a good deal of content, one usually uses a stamp with this information:

"In order to answer your letter as quickly as possible we are placing this stamp on the letter itself since efficiency is more important than formality. If you consider it necessary to come to us again regarding the given issue, please return the letter."

Do not be afraid to cut deeply. Very frequently mountains of paper appear on the desks of managers because of their lack of decisiveness. Yet special research shows that a skilled and experienced manager can find a correct answer to approximately 80 percent of the letters immediately after he has read them. Hence the conclusion: trust yourself more and do not put to the side a letter which you have read. You will probably not be much wiser within a couple of days.

Do not hasten to purchase reproduction equipment. As experience shows, the appearance of this equipment in an organization causes a real paper "explosion" --for if there is a possibility of reproducing a document in 30 copies, why not take advantage of it? As a result the superfluous document appears on the desk of those managers who would not have received it previously when the typist typed it in only five copies.

Be merciless about job archives. Superfluous archives not only make it more difficult for you to find the necessary paper, but they also reduce the efficiency of the work of your subordinates. After they are stamped write a note as to how long to store the document. Teach your subordinates to freely destroy old papers, and it will immediately become easier to breath in your subdivision both in the literal and the figurative sense.

Trust your secretary. She is not paid to collect correspondence and submit it to you--the clerk can do this. She should serve as a filter on the path of the paper flow that breaks into your office. Her direct responsibility is to single out from the overall mass only those papers which require your personal immediate reaction. Permit her to distribute the rest of them among subordinates.

Entrust the documents to experts. Appoint one of your workers as the head expert in document circulation and let him carefully study each document, determine its necessity and value. He can also give a conclusion about the effectiveness of the form of the given document. Finally, he decides whether the document is worth reproducing or if it is sufficient to initial it and then send it to his coworkers. The advice of the expert will help you to find ways that lead to reducing the quantity of paper.

Apply the FSA method. It will help you to find more easily the correct answers to the following questions: What proportion of paperwork that leaves your subdivision is of little value? Is each document you have signed valuable to the enterprise? Does it recipient use it in a way that is useful to you? What is the general destiny of the documents you sign? What would happen if the documents did not leave your office at all?

A small amount of research of this kind will help you to understand the real value of the documents you prepare and avoid those which would not be missed by anyone.

Strive for simplicity. Even if you have a brilliant mastery of office work, refrain from any complications. In paperwork, as in any technical skill, there is a great law in effect: the simpler the design the more reliable it is. The more complex your system of document turnover, the more information

will be in need of decision-making, the greater probability of mistakes and misunderstandings, and the more difficult it is to teach subordinates to handle the paperwork correctly. Consequently, the volume of paperwork which you have to prepare yourself increases.

Try to think positively. Instead of continuing to be distressed about the surplus of paper, it is better to begin to reduce the quantity of it without putting it off indefinitely. To begin with try to simplify the forms and eliminate certain standard types of documentation. If this produces a positive result, analyze it and take the next step--it will be easier.

And so, go on a paperwork diet. It will undoubtedly improve your health!



11772
CSO: 1820/169

QUESTIONS ON RIGHTS OF INVENTORS AND THOSE MAKING SUGGESTIONS TO IMPROVE EFFICIENCY

Novosibirsk EKO: EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA in Russian No 7, Jul 83 (signed to press 2 June 1983) pp 199-200

/Text/ Questions

1. With the adoption of the new USSR Constitution the protection of the rights of inventors and efficiency experts was included as one of the Constitutional points for the first time. Citizens are guaranteed the freedom of scientific and technical creativity which is provided by the extensive development of scientific research and invention and efficiency activity. The state creates the material conditions necessary for this and organizes the introduction of inventions and efficiency proposals. What figures characterize the economic effect from the introduction of inventions and efficiency proposals in the USSR?

2. In order to determine the innovation of a technical decision which is declared to be an invention, patents are investigated in particular. For how many years and in what countries does one investigate the supply of patents for a minimum of patent information?

3. During the period of 1956-1970 the USSR State Committee for Inventions and Discoveries issued 190,432 authors' certificates and 15 patents, and during 1971-1975 these figures were 203,046 and 4, respectively. In what cases are patents issued and in what cases are authors' certificates issued?

4. In practice inventions and efficiency proposals are the result of the activity of creative brigades which include both workers and engineering and technical personnel. How is co-authorship determined then, and who has the right to be the co-author of a new technical decision?

5. The inventor or efficiency expert, naturally, has a desire to give the results of his creative labor his name or some title. Does the law grant him that right?

6. During the course of 5 years 20,000 rubles were paid to a creative brigade for an invention. Can the amount of the remuneration be increased even more if during the year subsequent to this 5-year period the volume of utilization of the invention increases?

7. In certain cases it is permitted to pay a one-time incentive remuneration with the issuance of authors' certificates, regardless of whether or not the inventions were utilized in the national economy. In precisely which cases?

8. For workers and employees who are authors of inventions or efficiency proposals that change technical norms and rates, the previous norms and rates are retained for 6 months from the time of the introduction of the new ones. What is the situation with those workers who have rendered assistance to inventors and efficiency experts in the introduction of the proposals?

9. The realization of many rights of inventors and efficiency experts in terms of existing legislation comes after the utilization of the inventions and efficiency proposals. Within what time period are the enterprises obligated to inform the authors about the beginning of the utilization of their technical decisions?

10. How are instructions issued for the granting of authorship, the requirement for co-authorship, the refusal of authorship or the submission of an application for an invention or efficiency proposal?



11772
CSO: 1820/169

BOOK DISCUSSES NEED TO EVALUATE QUALITATIVE AS WELL AS QUANTITATIVE ASPECTS OF PRODUCTION

Novosibirsk EKO: EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA in Russian No 7, Jul 83 (signed to press 2 June 1983) pp 201-203

/Review by Yu. N. Glazunov, doctor of technical sciences and G. G. Azgal'dov, doctor of economic sciences (Moscow) of the book "Ekonomicheskiyye problemy povysheniya kachestva produktsii" /Economic Problems in Improving Product Quality/ by L. M. Badalov, Moscow, "Ekonomika", 1982/

/Text/ A good example of theoretical research that is closely related to the practice of improving product quality in various branches of the national economy is the monograph by L. M. Badalov. Its author is in charge of the division for evaluating quality in the Scientific Research Institute of the Central Statistical Administration of the USSR, he has defended his doctoral dissertation and has mastered extensive material regarding this problem.

The book gives a comprehensive economic analysis which, as should be the case, begins with the politico-economic aspect of the concept "consumer value." This concept is inseparably related to product quality and, indicentally, is sometimes mistakenly equated with it. One cannot but agree with L. M. Badalov, when he comes to the conclusion that improving product quality has as a consequence fuller satisfaction of the public needs, and therefore the "problem of improving product quality is simultaneously a problem of public needs and their satisfaction." Important methodological conclusions are drawn here: first, one cannot correctly evaluate the degree of satisfaction of public needs if one does not take into account the quality of those products that satisfy these needs and, second, in the work for improving product quality it is necessary to take into account not only the narrow economic aspect, but also the social one. The book develops the concept according to which effectiveness depends directly on quality and it reveals the dynamics of this dependency.

A most important and most complicated problem of quality control is the quantitative evaluation. The analysis presented in the book makes it possible to advance in the solution to this problem. Thus, for example, the author shows that even in normative documents that are devoted to the methodology for evaluating product quality there is still not enough clarity and strictness when selecting the quality indicators that are taken into account. It correctly notes a mistake that is fairly frequent in practice--numerical values of many

important indicators (such as the productivity of machines) when evaluating quality are taken into account simply, without differentiating according to the various conditions of consumption. For example, as a rule, one does not take into account the differences in the productivity of the Niva self-propelled combine in various regions of the country which are conditioned, in particular, by the different soil and climate conditions.

The monograph subjects many key problems of product quality control to serious analysis. Thus it proves that product quality and the quality of work for manufacturing them are far from being the same thing. Hence it follows that the evaluation and stimulation of the achievement of these two kinds of quality should be conducted separately and with respect to different categories of workers. It is absolutely incorrect to try to solve the problem of improving quality only through updating the products and producing items with the index N (innovation). And this is precisely the path taken by many enterprises that produce consumer goods.

One can hardly achieve appreciable progress in branches which use a large number of frequently contradictory indicators to evaluate the work of enterprises for improving product quality. Thus, according to the author, planning agencies use about 700 (!) indicators just to measure and analyze the technical and economic level of production and the quality of products that are produced in various branches.

The author also considers the experience of our country's enterprises for improving quality. For example, the high quality of the Lada motor vehicles, which satisfies the requirements of the UN European Economic Commission has provided for a considerable increase in th eir experts. As a result, currency expenditures for importing equipment for the Volga Automotive Plant are already reimbursed by incoming foreign currency from the sale of products of this association. Belarus' MTZ-80 tractors, in terms of power, expenditure of fuel and operating time until the first capital repair correspond to the best world models, and in terms of their universality and the availability of operating and auxiliary equipment, surpass them. This level of quality guarantees the export of the MTZ-80 to more than 70 countries of the world, incuding the United States, England, France, Italy and Canada.

The factoral approach is now being used increasingly frequently to analyze economic macromodels, particularly the method of major components. L. M. Badalov's work has a special chapter devoted to the application of this method for analyzing the state of affairs in industrial ministries. On this basis it has turned out to be possible to reveal branches which should be the first to be provided with additional capital investments in order to raise the technical level and improve product quality. This analysis is a good example of the utilization of theoretical developments in order to solve purely practical problems.

While noting the positive qualities of the book under review, one cannot remain silent about the shortcomings. For example, the author's assertion that "economic science does not operate with such a category as quality" seems incorrect. If this were the case, L. M. Badalov's scientific research product

would be the only one of its kind, but at the present time the country has many other research projects on this problem. Certain interpretations of principles and methodology of quality measurement raise objection. They do not reflect the present degree of development of this new scientific discipline.

On the whole, the book "Economic Problems in Improving Product Quality," it seems to us, will be read with interest by all economists and engineers who are engaged in solving these problems and will be useful in their work.



11772
CSO: 1820/169

ADVANCED LABOR, MANAGEMENT TECHNIQUES SHOULD COMPLEMENT EACH OTHER

Novosibirsk EKO: EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA in Russian No 7, Jul 83 (signed to press 2 June 1983) pp 204-208

[Review by S. I. Nikiforov, director of the Novosibirsk Chemical and Pharmaceutical Plant, and B. P. Kutyrev, candidate of economic sciences, Institute of Economics and Organization of Industrial Production of the Siberian Branch of the USSR Academy of Sciences (Novosibirsk) of the book "Peredovoy opyt sotsialisticheskogo khozyaystvovaniya" [Advanced Experience in Socialist Management], ed. by R. A. Belousov and V. I. Senchenko, Moscow, "Mysl'", 1981, 262 pages]

[Text] The decorations on the Christmas tree are lit up for one or two weeks during the year. Then they are removed and placed in a box along with the toys and stored until the next year's celebration. Few would think about using the Christmas tree lights for everyday purposes. We thought of this allegory when we became familiar with the new book from the series "The 26th CPSU Congress: Problems of Theory and Practice."

The work, which was prepared by the department of control of socio-economic processes of the Academy of Social Sciences under the CPSU Central Committee and the department of economics of industrial production and construction of the Higher Party School under the Central Committee of the Communist Party of the Ukraine, describes certain most important advanced undertakings: the experience of AvtoVAZ, the movement for a unified comprehensive system of control of the effectiveness of production, the initiative "working without laggards" and others. Among them is the experience of the Shchekino chemical combine. The paragraph is headed, "Once Again About the Shchekino Method." Again one recalls the Christmas tree decorations--lighted, then put out, and lighted again . . .

"Again . . ." Why? Perhaps those to whom the book is addressed still have not figured out the complexities of the Shchekino method well? But it is extremely simple: produce products with fewer people! The fewer the personnel with the same wage fund, the greater the earnings of each worker individually; and each receives more benefits from the fund for social and cultural measures and housing construction. "The Shchekino experience was intended to give more

space for the operation of economic laws of socialism and to provide in practice for a combination of private, collective and public interest" (p 28).

But the simplicity of the mechanism that lies at the basis of any advanced undertaking, not excluding the Shchekino method, turns out to be only necessary, but still not adequate for its adoption. Let us take an example from brigade organization of labor. The inadmissibility of exceeding the maximum level of overfulfillment of output norms by piece-rate workers, and, consequently, a reduction of the number of workers is frequently considered to be one of the obstacles on the path to creating brigades. Can one overcome this obstacle? Of course, and by no other way than following the experience of the Shchekino workers. They say that this requires special permission. Nothing of the kind: as is explained in the book, in 1978 a new policy was enacted for adopting the Shchekino method: "The administration of the enterprises in conjunction with the trade-union committee can independently make a decision about changing over to working according to the Shchekino method" (p 33). Anyone who for some reason does not know this can find it out in the book. It is known that frequently ignorance is used as an excuse to avoid advanced methods.

On what grounds do we speak about self-avoidance of advanced methods? On the one hand, many executives have gotten burned from reducing the number of personnel. For example, the Omsk petroleum processing workers.* On the other hand, production workers understand well how difficult it will be if suddenly the reserve of labor force is not fully utilized. For many enterprises conduct subsidiary farming, render patronage assistance to agriculture, participate in planting greenery and cleaning up the territory of the city, and so forth. Moreover, there are stoppages because of interrupted supplies of electric energy, and so forth. It is not difficult to imagine what would happen if there were no reserve of labor force. We must also take into account that the situation with labor resources does not promise changes for the better. Thus when the number of personnel in several brigades is reduced the well-being of the entire collective and its managers can suffer.

Let us think about something in this connection. Should every enterprise adopt all advanced undertakings? After all, in the book under review alone 35 of them are described. Practitioners frequently assert that one cannot keep up with all the new initiatives and get a grasp of them, not to mention figuring out whether they are all acceptable. In our opinion, the answer to this question was not clear in the book. But from the content itself one can draw the conclusion: from any undertaking there are those who can derive advantage for themselves and bring it to the national economy. We also know of enterprises which manage successfully largely because they not only do not reject, but they themselves search for where the new originates, even if it is not recommended for universal dissemination.

All the methods described in the book do not preclude, but augment one another. Thus the VAZ workers provide an example of a comprehensive approach to organizing

*See the article by Igor Ognev, "The Flagship Sets the Course, EKO, 1981, No 8

production, labor, administration and the utilization of the achievements of scientific and technical progress. From the Aksay method they use the initiative of the workers when revising output norms--this most crucial issue in intraproduction life. The Shchekino method is a direct path toward increasing labor productivity. Brigade organization of labor, in addition to increasing productivity, is called upon to strengthen collectivism, the participation of workers in administration, and so forth.

The conclusion arises: if it is necessary to increase production effectiveness, use all possible advanced methods, linking them into a chain and subordinating them to this goal. This is the way the Tiraspol sewing workers operate, for example. But there is a problem here. Imagine that some enterprise which has not distinguished itself previously has suddenly begun to adopt all of the advanced undertakings without exception. What will happen to it? Even one is left breathless from the prospects. But one is also left breathless from the probable failures. It is no wonder that many have excellently mastered the principle "do not show your hand." At the basis of the fear is the same method of planning "from what has been achieved" which forces the enterprise to look back and store up reserves. Perhaps this is why one hears complaints that people are being "forced to introduce too many undertakings"? For example, the assignment for the Novosibirsk chemical and pharmaceutical plant for simple production and labor productivity for the 11th Five-Year Plan was the same as for the 10th. But successes in the past have little chance of being repeated because the provision of raw material delivered to us from agriculture has deteriorated sharply. It turns out that if reserves had been "held back" in the past they would be extremely useful. But if they had not been "held back"?

Everyone thinks about why advanced experience whose advantages and merits are so obvious is not properly widespread. The authors of the book have devoted special attention to this problem. They have also selected a special device--showing the history of concrete initiatives. "The Shchekino method," it is noted in the book, "developed in stages" (p 30). It should be clear from history what real potential possibilities lie in the Shchekino method as an effective means of increasing labor productivity; in which direction the method should be developed; and the main obstacles on the path to its mass dissemination. We borrowed these questions from the materials of the third session of the Business Club of the Newspaper PRAVDA, "More Acceleration for the Shchekino method."*

We have tried to answer the question of whether the authors have sufficient opportunities to show the history of all the methods. Undoubtedly they do not. For they have an average of approximately 7 pages for each one they have described. Nonetheless they have provided a very condensed summary of leading initiatives, beginnings, undertakings and innovations. A kind of encyclopedia will familiarize readers, in addition to those aforementioned, with the initiative "manual labor--on the shoulders of the machines," and with the movement for dissemination of the "contract of the 28," "the thousand workers" in the

*PRAVDA, 14 June 1982.

coal industry, efficient utilization of resources, the experience of party management in renovation, production under the conditions of the association, comprehensive planning of the socio-economic development of the labor collectives and regions, the comprehensive system of product quality control, the brigade contract, and so forth.

The foreword of the book is arranged in an interesting way. First it says that all the necessary prerequisites for introducing advanced experience exist under socialism. But these prerequisites are not automatically realized. Therefore it is emphasized: ". . . It is necessary to strengthen the planning basis for revealing, generalizing and disseminating advanced experience in management" (p 4). It lists party and government decisions and methodological provisions in this area that pertain to special assignments for introducing advanced technical equipment and methods of organization of production, labor and administration. "Now the utilization of advanced experience means not only the initiative and independence of the collective, but it is also an important assignment of the society" (p 5).

The authors raise the question of why executives are not sufficiently interested in following the best examples. In our opinion the authors have omitted an important element here. It is good to make it mandatory to introduce something new, but not in and of itself. A certain final result is expected from the new in the form of increasing labor productivity, improving material well-being, and so forth. But what is the point if 80 percent of the workers combine into brigades and all the rest remain as they were before? Obviously it is necessary to set for the collectives and managers high production and social assignments and unwaveringly demand their fulfillment. Under these conditions the enterprise itself will begin to search for progressive work methods in other enterprises and try to find out how to apply what is advanced for itself. Then there will be no need to check on how many workers "have been formed into brigades." Knowing that the brigade form, if it is not introduced perfunctorily for the report, produces a significant increase in labor productivity, the manager himself will turn to it. But if he still has the possibility of adjusting the plan, he will take advantage of this first, and brigade organization and the Shchekino method will remain unnecessary to him. Additionally, there was no room in "Advanced Experience in Socialist Management" for a number of methods which make it possible to appreciably increase production effectiveness. We have in mind, for example, the Novosibirsk method of regulating labor processes. Recommended for widespread introduction as early as 1979, it has not lost its significance up to the present day.

We recall this method not out of "local" considerations, but on the basis of the importance of regulating labor organization which is understood abroad as well. It is precisely because of this that the Novosibirsk chemical and pharmaceutical plant came out of the slump it was in for a long time when it did not see any special changes of succeeding at all. The situation arose thus. At the end of the 1960's, the beginning of the 1970's the plant failed to fulfill production plans, and the engineering-technical and management personnel forgot what a bonus was. Intrashift losses of working time, entire days of idle time and absenteeism greatly surpassed the average for Novosibirsk and for the branch, and there was a tendency for them to increase further. Labor

turnover was steadily increasing, exceeding 30 percent. The introduction of charts for regulation of labor according to the experience of the Novosibirsk radio parts plant for all workers made it possible to radically rectify the situation. Here is one of the indicators, along with the production indicators: even with a flu epidemic only a few employees of the plant fell ill. What happened? It turns out that the flu does not attack everyone, and those who are especially resistant to it are the ones who work according to the requirements of scientific organization of labor. The charts of the labor processes have a section which clearly prescribes working conditions in the working positions. Because of this regulation they managed to reduce the number of cases of illness.

But imagine that the chemical and pharmaceutical plant was in a favorable position. Then would it have adopted charts for scientific organization of labor? We think that it would only have done this upon the insistence or instruction from higher agencies. Hence the "formula": it is necessary to introduce something new under the condition that it will help the collective to solve essential problems that are set for it by the higher state assignments.



11772
CSO: 1820/169

ANSWERS TO QUESTIONS ON THE RIGHTS OF INVENTORS AND THOSE MAKING SUGGESTIONS TO IMPROVE EFFICIENCY

Novosibirsk EKO: EKONOMIKA I ORGANIZATSIYA PROMYSHLENNOGO PROIZVODSTVA in Russian No 7, Jul 83 (signed to press 2 June 1983) pp 209-210

/Text/ Answers

1. During the 10th Five-Year Plan alone as a result of the introduction of inventions and efficiency proposals our country saved about 29 billion rubles.

2. The minimum patent documentation included in the sphere of research carried out by an expert is all of the patents during the past 50 years of such technologically developed countries as the USSR, the United States, Great Britain, France, Japan, Switzerland, Germany (up to 1945) and the FRG.

3. The author of an invention can elect to have only recognition for the authorship with the rights and privileges envisioned by legislation and transfer the exclusive rights of the invention to the state, or he can elect to be recognized as the author and retain the exclusive rights on the invention. In the former case the author's certificate is granted, and in the latter--the patent.

4. When an invention or efficiency proposal is created by two or several parties, not all participation gives the right to co-authorship. This requires creative participation, the result of which has been an invention or efficiency proposal. Those who have rendered to the inventor or efficiency expert only technological assistance (blueprints, models, calculations) are not recognized as co-authors.

5. The authors are granted the right to petition the USSR State Committee for Inventions for giving inventions their name or some kind of title. Authors of inventions who have retained the patent and also efficiency experts are not given this right. An efficiency proposal is designated according to its content.

6. If the volume of utilization of the invention increases during the 4 years after the 5-year period, the amount of remuneration can be increased, but within the limits of the maximum sum. This rule thus applies only if initially the

amount of the remuneration was less than the maximum sum which is 20,000 rubles. This means that in our case the amount cannot be increased.

7. Upon issuance of authors' certificates for inventions created in connection with the fulfillment of a job assignment (according to the plan for scientific research work, development and introduction of new technical equipment), and also in organizations that are operating on a public basis (public design and technological bureaus, laboratories and brigades), the authors are paid a one-time incentive remuneration in the amount of from 20-100 rubles for one invention, but not more than 50 rubles to one individual.

8. The answer to this question is very significant, for example, for the brigade form of organization and stimulation of labor. For workers who have assisted the inventor or efficiency expert in the introduction of proposals, previous rates are retained for 3 months.

9. The enterprises are obligated to notify the authors about the beginning of the utilization of their inventions and efficiency proposals within a month.

10. Punishment for these legal violations is envisioned in the form of incarceration for a period of up to a year or corrective labor for the same amount of time, or a fine of up to 500 rubles.

The book by V. Skripko, "Okhrana prav ratsionalizatorov i izobretateley" /Protection of the Rights of Efficiency Experts and Inventors/ (Moscow, "Moskovskiy rabochiy", 1982) was used for preparing this material.



11772
CSO: 1820/169

END